
LONDON SCHOOL
TROPICAL MEDICINE

# TRANSACTIONS

OF THE

# MEDICAL AND PHYSICAL SOCIETY

OF

# BOMBAY.

FOR THE YEAR M.DCCC.XLIII.

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# MEDICAL AND PHYSICAL SOCIETY

OF

# BOMBAY.

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# TRANSACTIONS.

1843.

# TRANSACTIONS

OF THE

# MEDICAL AND PHYSICAL SOCIETY

OF

# BOMBAY.

1843.

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## Article I.

*Medical Report on the Kingdom of Shoa.* By R. Kirk, Esq. Assistant Surgeon, attached to the Embassy to the Court of Shoa.

* Presented by the Medical Board, May, 1843.

The Kingdom of Shoa, included between the parallels of 8° 30′ and 10° 30′ north latitude, and meridians of 38° and 40° 20′ east longitude, may be divided for the purposes of medical topography into two districts, differing widely in elevation, in climate and productions, and consequently each marked by peculiarities of pathological character.

Bounded to the eastward by the desert wilderness of the Hawash, a parched inhospitable plain, thinly inhabited by nomadic tribes of the Adiel and Galla races, itself 2,500 feet above the level of the ocean, the territories of Southern Abyssinia, may be said to commence at the foot of the first series of hills, which gradually increasing in elevation and fertili-

* *Note by the Secretary.* This Report has subsequently been revised and corrected by the Author, and several explanatory notes have been added by him.

ty, at length reach the barrier of the extensive range, which running from north to south, forms the brink of the elevated table-land of Shoa.

The breadth of this lower district varies from ten to fifteen miles ; it is a land of hill and valley, abundantly irrigated by numerous rivers conveying the waters of the mountain range to the Hawash,—rapid and important torrents, when swollen by the periodical rains, which in the drier months dwindle to small clear streamlets flowing through broad pebbly beds, and becoming lost soon after reaching the thirsty plain below.

This tract, which includes the provinces of Efat, with Effrata, Gidem, Makhfood, Channo, Aden, Burhat, &c., is well wooded, and highly cultivated, yielding rich crops of Teyf (*Poa Abyssinica*), Marshela (*Holcus or Jawari*), cotton and safflower; whilst the lemon, the plantain, the capsicum, the aloe, the various acacias and camel-thorn, prove its claim to a tropical climate, resembling much that of the Deccan and the milder regions of Western India.

It is thickly inhabited by a mixed race, the Mahomedan far out-numbering the Christian population, consisting of the descendants of the Moslem invaders of the country, offsets from the Adel tribes, who have left their pastoral and wandering habits, and engaged in agricultural pursuits in this more settled realm, and converts from the purer faith of Abyssinia. There is little difference perceptible in the physical configuration of the male inhabitants, but the Islam female is at once recognized from the Amhara, by her slighter and more delicate form, her fairer complexion, her long and luxuriant hair, and the Arab expression of her face.

Leaving this lower region and ascending by one of the few passes, which pierce the lofty barrier to the westward, whose precipitous sides are clothed with dense forests of the cedar-like juniper, we reach the elevated table-land of Shoa, in height varying from 8 to 10,000 feet above the sea, and strikingly different from the tract below, in its climate, and the aspect and products of its soil.

The view now extends over a wide expanse of undulating country, gradually sloping towards the blue ranges of the *Salalla* Mooga and Galla mountains, which skirt the horizon to the westward, and abutting on the frontiers of Gojam and Damot, form the eastern boundary of the valley of the Abai, the earlier sources of the Blue Nile, towards which all the rivers draining this extensive plateau take their course, and leaving the elevated plain, fall into the deep and broad ravines by which the country is intersected.

These vast fissures, extending from one extremity of the kingdom to the other, have evidently been produced by some subterranean convulsion or from the contraction of the hardening superstratum, when this region was subsiding from the vast igneous operations from which it had its origin, whose great extent is shewn by the trachyte, basaltic and other volcanic formations, which form the prevailing geological character of the whole country; and whose influence is still felt in the frequent occurrence of slight earthquakes at Ankober and the neighbouring districts. The decomposition of these rocks slowly proceeding for ages, has produced a deep stratum of rich, dark, soil, which liberally watered by the copious and periodical rains, and blessed with a genial climate, produces, with but little aid from man in its cultivation, a plentiful supply of all the necessaries of life, and affords a boundless and rich pasturage for his numerous herds and flocks.

The climate of this favoured region is exceedingly fine, possessing a pure and buoyant air; whilst the fierce heat of a tropical sun is tempered by the great elevation of the country. The nights are chilly, and in the colder months, though snow is here unknown, a thin sheet of ice is often found on the more sheltered pools, whilst a white hoar frost frequently greets the eye at day break; the thermometer in the shade seldom rising above 70° or 75° during the day.

During the warm season, the nights still continue cool, although the power of the sun's rays is often oppressively felt on exposure, but the slight shelter of an Abyssinian roof, is sufficient to moderate its heat, and afford even at this period, a temperate climate. For a month or two preceding the rainy season, which commences in June, strong easterly winds sweep over the country, their eddies forming whirlwinds, whose lofty columns laden with dust, fleet swiftly away, bearing off in their course the thatch from the houses and whatever light articles are caught within their vortex.

The rainy season is ushered in with violent storms of thunder and lightning, apparently attracted to their region, as well by the highly ferruginous character of many of the basaltic rocks, as by its elevation. The whole country, before brown and arid, now becomes clothed with the richest verdure, extensive tracts of cultivation meet the eye in every direction, fields of wheat, barley, and beans, give a European character to the vegetation, whilst the luxuriant herbage is fragrant with mints, thyme and other aromatic plants, and the charm of woodland scenery is alone wanting to transfer the delighted traveller to the regions of his

northern home; but the whole of this extensive tract is singularly destitute of timber, and save a few Kossos invariably marking the site of the scattered villages, a dark clump of funereal Junipers surrounding a Christian Church, or a solitary Wyra, scarce a tree is seen for miles around to break the monotony of the view.

*Ankober*, the capital of the kingdom, in 9° 35′ north latitude and 39° 54′ east longitude, is situated on an oblong conical hill, 8,200 feet above the level of the sea, rising from a mountain ridge of trachyte formation, divided from the higher range of the Chaka by the valley of the Airara river, which flows to the Hawash with a southward course. An elevated peak on the northern edge is entirely appropriated to the palisaded residence of the king and its numerous out buildings; the rest of the hill is occupied by the town, which towards the east, commands a very extensive prospect over the hilly district below and the distant plains of the Adiel; it contains about 2000 houses, which are thickly scattered over the summit and around the sides of the mountain, each dwelling enclosed by a bushy hedge, giving the site a green and cheerful aspect; it is traversed by narrow lanes, which from want of drainage and the uncleanly habits of the people, are generally in a filthy state, and in the rainy season become nearly impassable from mud, those from the upper to the lower portions of the town forming channels for numerous streamlets which fall from rock to rock in a thousand miniature cascades.

The Climate of Ankober, which was the head quarters of the Embassy, will be better judged from the following abstract of a thermometrical register kept during the years 1841 and 1842, to which has been annexed for the purpose of comparison, the thermometrical range of the Mahableshwar and Neilgherry Hills of Western India, the latter in latitude and elevation very nearly coinciding with Ankober.

The observations were made with horizontal self-registering thermometers of Fahrenheit's scale, sheltered from the rays of the sun, but freely exposed to the external air.

| Station. | North Latitude. | East Longitude. | Elevation above Sea. | Mean annual temperature. |
|---|---|---|---|---|
| | | | feet | |
| Ankober | 9.° 35′ | 39° 54′ | 8200 | 55 5 |
| Neilgherries | 11 20′ | 77° 10′ | 7400 | 58 1 |
| Mahableshwar | 17 56′ | 73° 30′ | 4500 | 66 2 |

14. Abstract of a Thermometrial Register kept at Ankober during the year 1842.

| | Mean temperature of the month. | | Means. | | | | Extremes. | | | | | Number of rainy days. | | Winds. | | Mahableshwar. | | | | Neilgherries. | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1841 | 1842 | Mean daily variation. | Mean maximum. | Mean minimum. | Difference of mean temperature of successive months. | Greatest daily variation. | Least daily variation. | Extreme monthly variation. | Extreme maximum. | Extreme minimum. | 1841 | 1842 | Direction. | Force. | Mean of month. | Extreme maximum. | Extreme minimum. | No. of Rainy days. | Mean of month. | Extreme maximum. | Extreme minimum. | No. of Rainy days. |
| January | | 52.0 | 12.7 | 58.3 | 45.6 | 0. 2. | 16. | 8. | 24. | 65. | 41. | | 0. | E. and E. S. E. | light. | 67.1 | 79.5 | 54. | 0. | 53.1 | 68. | 39. | 1. |
| February | | 54.6 | 10.5 | 59.8 | 49.3 | 2. 6. | 18. | 4. | 20. | 66. | 46. | | 7. | E. S. E. L. S.E. | light. | 67.4 | 80.5 | 55. | 3 | 56. | 70. | 41. | 3. |
| March | | 57.2 | 11.5 | 62.9 | 51.5 | 2. 6. | 16. | 6. | 23. | 69. | 46. | | 4. | E. | light. | 71.1 | 86.5 | 54.5 | 0. | 62. | 77. | 47. | 0. |
| April. | | 55.2 | 7.7. | 59. | 51.3 | 2. 0. | 11. | 2. | 16. | 62. | 46. | | 14. | E. | strong. | 75.2 | 87.5 | 64. | 5. | 63. | 77. | 46. | 10. |
| May | | 59.7 | 9.3. | 64.3 | 55.1 | 4. 5. | 13. | 5. | 16. | 67. | 51. | | 4. | E. | occasionaly strong | 73.3 | 89.7 | 63. | 3. | 61.5 | 76. | 50. | 14. |
| June | | 62 1 | 7.9. | 66.2 | 58. | 2. 4. | 17. | 5. | 17. | 69. | 52. | | 8. | E. | Do. | 65. | 81.5 | 53. | 26. | 58. | 70. | 48. | 16. |
| July | | 58.1 | 9.1. | 62.7 | 53.6 | 4. 0. | 13. | 6. | 18. | 69. | 51. | | 28. | W. A. M; E. P. M. | moderate | 60.7 | 70. | 51.5 | 31. | 58.7 | 70. | 50. | 19. |
| August | 55.8 | 55.7 | 9.8. | 60.6 | 50.8 | 2. 4. | 12. | 8. | 14. | 63. | 49. | 26. | 28. | E. | Do. | 59.9 | 66. | 53. | 31. | 58.6 | 73. | 46. 5 | 10. |
| September | 55.3 | 55.2 | 9.0. | 59.7 | 50.7 | 0. 5. | 12. | 5. | 15. | 62. | 47. | 13. | 24. | E. A. M; W. P. M. | Do. | 62.2 | 70. | 56.1 | 18. | 60. | 69. | 51. | 19. |
| October | 52.1 | 52.2 | 8.3. | 56.3 | 48.1 | 3. 0. | 11. | 5. | 15. | 59. | 44. | 4. | 10. | North 2 P. M. | strong | 65.8 | 73.5 | 58. | 12. | 58. | 67. | 49. | 15. |
| November | 51.9 | 50.8 | 10.2. | 55.9 | 45.8 | 1. 4. | 13. | 6. | 16. | 58. | 42. | 4. | 9. | Northerly | moderate | 63.9 | 72.7 | 55. | 0. | 56. | 66. | 46. | 8. |
| December | 51.8 | 53.2 | 8.6. | 57.5 | 49.0 | 2. 4. | 13. | 4. | 14. | 60. | 46. | 0. | 20. | East | light. | 63.8 | 73.1 | 52. | 0. | 52.5 | 63. | 42. | 2. |
| Annual Means and Extremes | | 55.5 | 9.6. | 60.3 | 50.7 | 2. 3. | 18. | 2. | 24. | 69. | 41. | | 156 | | | 66.2 | 89.7 | 51.5 | 129 | 58.1 | 77. | 39. | 117. |

*Characteristics of the Months.*

*January*, 1842. A fine clear pleasant month, with a few cloudy days.

*February*, 1842. Fine until the 8th when the weather became unsettled and cloudy, with occasional heavy rain, thunder and lightning, the commencement of the rain of Bounty. From the 15th to 21st cloudy without rain; 21st, 23d, 24th, occasional showers; afterwards cloudy.

*March*, 1842. A pleasant month, with occasional cloudy days and showers; on the 27th heavy rain at night, thunder and lightning.

*April*, 1842. A dull, cloudy and rainy, month; the rains ceased on the 24th and were followed by strong, cold, easterly winds.

*May*, 1842. A pleasant month with occasional cloudy days.

*June*, 1842. A pleasant month; the weather began to cloud over on the 13th with showers, and the rains of the Covenant set in on the 21st with thunder, lightning, and heavy rain, at night.

*July*, 1842. Frequent heavy mist in the morning, cloudy with showers during the day, with generally heavy rain at night, accompanied with thunder and lightning. Prevailing winds, easterly.

*August.*—as July.

*September*, 1841. The rains continued until the 12th ; latterly with heavy storms of thunder and lightning, afterwards cloudy weather with occasional showers and cold, strong, northerly winds.

In 1842. The rains did not cease until the 28th.

*October*, 1841. A fine month with cold, strong, northerly winds. In 1842, a dull cloudy and showery month, with cold northerly and north-easterly winds.

*November*, 1841. Cloudy with some rain until the 13th, afterwards fine cold weather, generally a cold northerly wind A. M. 1842, a dull, misty, showery month.

*December*, 1841. A cold pleasant month with occasional cloudy days: wind very light. 1842, a cold misty and rainy month.

The seasons of the kingdom of Shoa may be divided into, 1st. The rains of the Covenant, commencing on the 21st of June, July, August and September.

2nd. The cold season; October, November, December, January, and the first half of February.

3d. The rain of Bounty; the latter half of February, March and part of April.

4th. The hot season ; April, May and June.

From these tables it will be observed that the most marked character-

istics of the climate of Ankober, are the periodical rains, and its mild and equable temperature. The greatest difference between the mean temperature of the coldest month (December) and the hottest (May), having been only 8° degrees, whilst the greatest range during the whole year, between the extreme minimum 41° and maximum 69°, amounted to only 28 degrees. The mean annual temperature having been $55\frac{1}{2}°$. It is much to be regretted that we had no Pluviometer to ascertain the amount of the fall of rain during the year, but judging from the average fall during the monsoon in India, it may be estimated at about 100 inches. Three Barometers received in India, were broken and rendered useless on the journey from the coast.

Perhaps there is no kingdom which possesses a greater variety of climate within its limits than Shoa. Leaving the parched plains of the Adiel on which is felt the fierce heat of tropical Africa, a journey of eight miles brings the traveller to Farri, 3000 feet above the sea, and possessing the genial warmth of an Indian province ; proceeding onwards twelve miles, he reaches Alioamba, which with an elevation of 5000 feet, enjoys a mild, Italian sky; from whence ascending the Ankober mountain, a ride of but five miles he gains a height of 8,000 feet, and a climate only to be compared to an English spring, whose coldness may be judged from the fact, that fires are needed in the house morning and evening throughout the year.

THE POPULATION of the kingdom of Shoa and its dependences, has been estimated at two millions and a half, of whom one million may be considered Abyssinian Christians, the Amhara; and the remaining million and a half divided between the Mahomedan and Galla races. Ankober the capital, is supposed to contain from eight to ten thousand inhabitants, but the number varies much, a great decrease taking place on the departure of the king to any of his other residences.

The Christian inhabitants of this kingdom of Southern Abyssinia are a tall, stout and well formed race, with a good muscular developement and expanded capacious chest; their usual height varies from 5 feet 7 to 5 feet 9 inches, and a stature exceeding 6 feet is frequently met with; deformity is rare, but there are a few dwarfs, the shortest seen at the age of 34, having been only two feet four inches in height. Their features are regular and of the Caucasian family with a good facial angle ; their colour varies from a brownish olive to the clear black of the Negro, but the most prevalent hue is a coppery brown with a tinge of black. Their hair is black, naturally long with some degree of crispness, and though the wig-like style

of dressing gives it an appearance somewhat resembling that of the Negro, its luxuriance and greater silkiness mark a strong difference between the two races.

The females are tall, stout, and masculine in appearance, their faces generally broad beyond the bounds of symmetry, and but few can lay claim to beauty; the shaved head or national style of dressing the hair, and the substitution of a blue stained arch for the eradicated eyebrow, sadly diminishing any pleasing expression they may naturally have possessed; much good humour is, however, generally pourtrayed in their countenance and in common with all Eastern races, their teeth are white, sound, and regular.

From marriage and cohabition with a numerous slave population from the Galla and Negro districts, an approximation towards a closer resemblance to these races is occasionally seen in the slighter form, or the thick lip and flattened features, but not so frequently as might be expected under such circumstances.

As before remarked, the Mahomedan male population differs but little from the Christian, and the Islam female is marked by the greater delicacy of her form and the fairer hue of her complexion. The same remarks apply to the Galla tribes, the men of which differ but slightly from the Abyssinians, whilst many of the females possess, in their younger days, much beauty and symmetry of form.

The Shoans may be considered a good humoured, cheerful race; their quarrels are usually confined to a war of words, and should the sword be drawn, the interference of the by-standers generally prevents any serious result; they are tolerably honest, more perhaps owing to the salutary government of their present ruler, than to personal disposition; but they are insatiable beggars, uncleanly in their habits, holding ablutions and cold water in the greatest horror; but little observant of trust, and bigotted in their religion, which is Christianity indeed, but in its most corrupt form; whilst the grossest immorality pervades all ranks, the marriage tie is held in little honour, concubines residing in the same establishment with the lawful wife; professed prostitution is unknown, but the loose freedom of intercourse between the sexes tends greatly to spread the ravages of syphilis, the scourge and punishment of this profligate race.

Most indolent in his habits, save when roused by the frequent military expeditions against the Galla, or employed in the light toils of husbandry, the Shoan, after a day spent in basking in the sun, in idle gossip with his neighbours, or listlessly gazing for hours on the wide prospect, generally

gained from his elevated home, retires to his bed as soon as the shades of night close in, and seldom leaves his couch, till the sun's rays have in some degree tempered the chilly dawn of his mountain climate. Useful industry is nearly unknown, but few artificers are required to supply the simple articles of domestic use or personal ornament, and whilst the severer household drudgery is performed by slaves, the females of the middle rank generally pass the entire day in the monotonous employment of spinning cotton thread for the weaver's loom.

The Abyssinians generally take two meals daily, one eaten early in the morning, the other in the evening. Their food is principally farinacious except among the higher ranks. Fermented bread of a good quality made from wheat flour is commonly used by the upper classes, whilst the diet of the lower, consists almost entirely of coarse thin leaves made from the Marshela or Juwari, or of sour bread resembling large pancakes prepared from the small grain of the Teyf, both being occasionally seasoned by immersion in a strong decoction of red chillies and salt.

All, when opportunity offers, indulge to excess in Brindo, devouring the raw and reeking flesh of the newly slain beast unseasoned by any condiment, the slaves and poorer retainers appropriating the viscera and intestines as their share; should any portion of the slaughtered animal remain unconsumed, or a supply of provisions be required for a journey, Quanta is prepared by cutting it in thin slips and drying it in the sun; or it is made into sausages called Qualama, with a plentiful addition of salt and red pepper and thus eaten without any further process.

The science of cookery is not, however, entirely unknown; the most common dish called wotz, much resembling a hot curry, is eaten with a liberal supply of bread. Vegetables are only used on their fast days, when the gooman, a coarse species of cabbage, constitutes their entire meal, having been sliced up small, it is boiled and eaten in large quantities, seasoned with black pepper and salt; boiled beans and peas are also sometimes used on these days. With the exception of limes, some sour grapes, and a few coarse oranges and plantains grown in the lower district, there are no cultivated fruits in the country.

The usual beverage in Shoa is either Tudge or Tulla, the very poorest inhabitant seldom drinking pure water. The brewing of tudge or mead is almost entirely restricted by the * Negoos to his own establish-

* The title of Negoos resembles in signification the ancient Pharoah; the latter kings of Egypt bore the title Nechoos, it is the Nagood of the Hebrews. Bryant's Analysis of Ancient Mythology.

R. K.

ment from which it is liberally issued to those entitled to the deergo, or daily allowance of provisions from the royal household. It is prepared from a mixture of honey, with commonly about six times its quantity of water, to which are added the berries of the Gesho (a species of Rhamnus) for the purpose of imparting a slightly bitter flavour; it speedily ferments, and is usually consumed a few days after preparation. It varies much in quality according to the quantity of honey employed, and some of the strongest descriptions of tudge, on the pots being carefully sealed, will keep for years and are of very intoxicating quality.

Tulla or beer, the common drink of all ranks, is brewed from marshela or barley, which is previously buried until germination commences, the bitter principle being imparted from the leaves of the Gesho. It is usually of very weak quality and speedily runs into the acetous fermentation.

The use of coffee is prohibited to the Christian population, but is a favourite beverage with the Mahomedans.*

These liquors are generally used in moderation, and (though there are exceptions) drunkenness is by no means a common failing, except on the days of their high religious festivals, when the whole population of the kingdom freely indulge in their use and frequently to excess; the consesequences of these feastings which are generally accompained with a corresponding consumption of raw meat or brindo, frequently showing themselves in dyspeptic complaints.

These seasons of rejoicing are however more than counterbalanced by the frequent fasts enjoined by their religious ordinances, and which are generally strictly preserved.

| These consist of— | days. |
|---|---|
| The Fast of Lent in March and April | 56 |
| „ of the Apostles, June | 25 |
| „ of Ninive | 3 |
| „ of Nahase, August | 15 |
| „ of the Nativity, December | 4 |
| In addition every remaining Friday and Wednesday is observed as a fast | 76 |
| | 179 |

* Though I believe poisoning to be an uncommon crime in Abyssinia, the servant presenting a horn of mead or beer to a guest always pours some into the palm of his hand and drinks before him, in token of its purity.

R. K.

From which must be deducted the 14 Sundays on which day this observance is never kept..... 14

Total days. 165

or nearly half the year during which, dry bread, Gooman, and a few other esculent vegetables form their sole diet.

The smoking of tobacco is prohibited by the canons of the church, but is notwithstanding freely indulged in by many individuals who inhale its fumes through a rude water hookah; some preferring the leaves of the Atafaris (*Datura Stramonium*) for its intoxicating qualities. The leaves of the Endá ha hoolá (*Calamchoe Verea*) are also used in this way medicinally in asthma and some diseases of the lungs; snuff to which the interdiction does not extend, is a favourite luxury.

The Shoans taken collectively, are a well clothed race, the fabric employed, generally of home manufacture, is a warm cotton cloth, usually of a coarse thick texture, which is made up by the men into the senafil, a kind of drawers, very full and scarcely reaching to the knees, in appearance much resembling a kilt. The waist and upper part of the abdomen, are girded with a long narrow cloth called the makunuk, and a large robe or wrapper named the shumuh worn doubled, envelopes the whole person, the ends being thrown over the shoulder; by this garment the free exercise of the arms is much impeded and it would at once be discarded by a race of any but the most indolent habits. In war its place is supplied by the skin of the lion, the leopard, or other animal, by which they are more freely enabled to wield their weapons.

The sword, spear, and shield, are the national arms, the king however possessing a few hundred stands of muskets which are kept within the palace and only issued to the gunmen, when occasion requires. The sword is semicircular in shape, like a large sickle and sharp on both edges; it is worn on the right side, bound on the waist by a belt and the makunuk and projecting behind; apparently most inconvenient in form, and drawn with difficulty, it is used for all purposes, and in the consumption of brindo severs the portion of raw flesh, at the teeth, with an upward cut much endangering the face of the reveller. The shield is large, circular and of good construction, the best being made from the hide of the wild buffalo, and richly ornamented with brass or silver plates and bosses. The spears, of which two are carried into action, are strong, serviceable, and the long blade frequently forged in a most symmetrical shape.

The dress of the women consists of a loose gown, which is worn very

full and made from the same cotton cloth as the shumuh; a small makunuk is bound round the waist, a robe or shumuh exactly resembling and worn in the same manner as that of the men, being thrown over all. Occasionally on festival days, the women wear a narrow fillet of white linen bound round the temples, and on a journey a small turban is used as a protection from the sun.

A sheep-skin fleece or debalo, is commonly worn by the men in the cold weather, for which in the rainy season, a burnoos or cowled cloak of coarse black blanketing is substituted; no shoes or sandals are used, except occasionally on a journey on foot; at other times all ranks from the king to the beggar go barefooted.

No covering for the head is worn, except by the different orders of the clergy, who are distinguished by the use of a white turban; most of the men of the lower classes and nearly all the younger females, keep the head close shaved; whilst the matrons and men of higher rank wear the hair in a thick bushy wig called gofri, a most excellent defence against the sun, but which being plentifully bedewed with an anointing of butter, is most offensive to the smell, as well as disfiguring in appearance. A beard or mustache is seldom seen, the men of all ranks keeping the hair of the face closely clipped with scissors, a razor being never used for this purpose.

Both sexes are fond of ornaments, but their use is much restricted by the edicts of the Negoos; gold may be worn by the monarch alone, or some few of his more powerful nobles, to whom this privilege is accorded, seldom more than a plain ring of the precious metal being allowed even to these favoured individuals. A great variety of personal decorations, many of them of silver and displaying considerable taste, mark the prowess of the wearer against the Galla or Adel foe: necklaces of beads, or strings of small circular plates of ostrich shell are in common use. The personal ornaments of the females are more limited in variety, necklaces of small beads, tastily strung, are much prized, bracelets and anklets of brass or pewter are worn by all, whilst a button of black horn adorns the ear, replaced on holidays by a singular ornament of clustered silver balls. Both sexes of the Amhara wear a blue silk string, resembling a watch-guard round the neck, the matab or distinguishing badge of Christianity.

The clothing of the day forms the bedding at night; a few skins are spread on the cot or mud floor, on which the members of the family lie in a state of perfect nudity, the joint contributions of clothing being dis-

tributed over all; by this arrangement they suffer but little from the inclemency of the weather, and on the military expeditions, lie night after night without tents or any further protection from the severe cold, apparently without any detriment to their health, save that this close personal contact tends much to spread those contagious cutaneous affections, which are so prevalent amongst all ranks.

Their houses, generally perched on the summit of a hill, are good and serviceable in construction as a defence against the climate, and much resemble in design an Indian double walled tent; containing a centre room called the "ardurush," with its small encircling apartments, the "gwadas." A single door is generally the only aperture by which light or air is admitted, or by which the smoke from the fire, sunk on the earthen floor, finds an exit. The form of the house, which has no upper story is either oval or circular, the walls generally of rude stakes firmly bound together, and coated with mud; but where wood is scarce, they are constructed from unhewn stones and mud; the roof is conical and covered with a good thatch.

The ardurush is the common residence of the family, its sole furniture generally consisting of one or two rude cots called "ulgars," the gwadas being appropriated to the mules, the grinding mills, and for storing household gear. Ventilation there is none, and cleanliness is but little studied; the ulgars swarm with fleas and other vermin, whilst the rafters are black with the dense smoke from the wood fire, which filling the close apartment, occasions frequent attacks of opthalmia, and with the collected filth of years and the uncleanly habits of the residents, gives rise to, and perpetuates a variety of cutaneous diseases.

## Prevailing Diseases.

The British Embassy had taken up its residence at the capital of Shoa, but a short period, before daily applicants applied for the purpose of obtaining medical advice, and a succession of patients subsequently availed themselves of it from our advent to the period of departure; seldom fewer than five or six attending daily, frequently more, and on several occasions as many as twenty assembling for advice on the same morning, many of them having come from the most distant provinces, and had the practice not been discouraged, the fowls, eggs, honey, butter, and other articles, they brought to propitiate the English Hukeem, would have nearly furnished a supply of minor stores for the entire establishment —

whilst in our excursions into the interior of the kingdom, a former patient would frequently be found at the village of our halt, whose gratitude was testified by the offering of some trifling article of domestic produce.

The Abyssinians appear to place implicit faith in the efficacy of European medicine, more particularly when accompanied with rigid directions regarding diet, and the exact period for which it is to be continued, all advice in this particular being strictly followed, and the medicines taken with tolerable regularity; on occasions when the Negoos himself has been the sufferer, the remedy was however always previously tried on one of his subjects, and on a favourable report being made the Royal patient himself commenced its use; in the event of sickness amongst the ladies of the blood royal, the customs of the country prohibited a personal interview. The Queen Besabish, having been attacked with rheumatism in the hand, on visiting the palace for the purpose of attending her, I was shewn into a secluded court, where she received me, seated in a small tent, a carpet being spread outside for my accommodation, and a seam of the tent partly opened for the exhibition of the afflicted member. On another occasion, advice being requested for one of her daughters, the Princess was found in the principal stable of the palace, in which a bed had been placed, behind the curtains of which she sat unseen, her legs the subject of consideration hanging outside. By his daughters by other wives, or the ladies of his chiefs no concealment of this kind was however affected.

Though placing full confidence in the power of European medicine, the Shoans, on all occasions, shewed the greatest dread and dislike to all surgical operations and would seldom consent to their performance. On one occasion at Angollalla, a boy with an extensive ulcer of the leg which had denuded the whole length of the tibia and was complicated with an ununited compound fracture near the knee-joint of long standing, was brought for advice; he was fast sinking from the effects of this severe injury, and it was evident that amputation offered the only chance of saving his life. Having experienced the impracticable character of the Abyssinians on like occasions, I requested an officer of the king's household, who was present and who I thought had acquired more liberal ideas on these points, to visit him with me, and then in his presence proposed the operation to his mother, but to my great disappointment he was horrified at the proposition and strongly advised me to do nothing of the kind. "If you succeed you will get no credit by it, people will say it was the will of God; if the boy dies, they will say you killed him and you

will have much trouble." He also spoke so seriously to the mother that she soon carried away her suffering boy.*

That personal vanity will however overcome this dread of the knife, I had an instance on another occasion, when a coarse bloated looking elderly man came for advice. On being asked what was the matter with him, "The matter, look here," (pointing to a small warty excrescence on "his forehead)" this is the matter — off with it, — cut it off — my face is quite spoiled and has become that of a cow." Whilst one inhabitant of Ankober, who frequently passed his time in watching my mode of practice and was himself considered no mean proficient in the science of medicine and surgery, brought an aged slave woman who had a small steatomatous tumour on her finger, for the sole purpose of witnessing the operation for its removal.

This distrust even extends to the use of the lancet, although bleeding is frequently practised by themselves in several affections. On one occasion late at night the Negoos requested me to visit one of his ardurush adari, or picked body guard, who was found lying in a small tent crowded with people; several priests were sitting by his bed side, whilst some of his friends were tying red worsted threads round his fingers and toes. He was perfectly senseless, having received a coup de soleil, and had been in this state since noon; half the people were immediately turned out, the tent thrown open to admit the cool breeze, and a vein opened, by which he was much relieved, at length opened his eyes, and finally was sufficiently restored to speak to those around him, who now began to whisper to each other that I was taking too much blood — that I was killing him; and they soon began to remonstrate so strongly, that I was compelled to desist, binding up the arm very loosely in hope the bandage might slip and give him further relief before they could stop the bleeding. Having administered some further remedies he was left with much fear that he would relapse into his former comatose state. On visiting him early next morning he was considerably improved, but still complained of fullness of the head; on proposing to bleed him again, his friends refused to allow me. On leaving him, a request was therefore sent to the Negoos that as he had placed the sick man under my care, I should not be interfered with in adopting whatever measures I might think necessary, and

* This boy was subsequently again brought for advice when the parents were as anxious for the performance of the operation as they had before been averse to it; but the child was so emaciated and the state of his health held forth so little promise of a favourable termination, that I was compelled to decline acceding to their request. R. K.

asking him to give an order that he should be bled, to which he returned an answer that "if he was not better to-morrow, it should be done." On the morrow it was found that his friends had removed him in the evening to a neighbouring village, to place him out of my reach where he eventually recovered after a lingering illness.

During the sojourn of the British Embassy in Shoa, between two and three thousand persons applied for medical aid; from the unsettled place of our residence during the greater part of the period, no regular list of these applicants could be preserved, but the following table of cases seen at Ankober between December and April 1842, will afford some idea of the usual diseases coming under treatment, and their relative proportion.

*Abstract of* 400 *miscellaneous Cases exclusive of Syphilis, seen at Ankober between December and April,* 1842.

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Fevers | Continued. | 2 | Anasarca | 3 | Exostosis | 1 | |
| | Intermittent | 10 | Bronchocele | 7 | Wounds | 7 | |
| Hepatitis | | 9 | Stone in bladder | 2 | Ulcers | 21 | |
| Gastritis | | 1 | Hernia | 2 | Abscess | 5 | |
| Bronchitis | | 1 | Opthalmia | 36 | Fractures, recent | 2 | |
| Dysentery | | 5 | Conseqr. Opacity of Cornea | 9 | Dislocation, old unreduced | 2 | |
| Diarrhœa | | 2 | Amaurosis | 2 | Cracked Integt. of sole of foot | 4 | |
| Pulmonary Affection, Inflammatory. | | 9 | Hypopium | 2 | Threatened abortion | 1 | |
| Phthisis | | 2 | Nyctolopia | 4 | | | 400 |
| Catarrh | | 6 | Cutaneous Affection Miscel. | 63 | Syphilitic cases treated during the same period and not included in the above list. | | 317 |
| Diseases of the Heart | | 5 | Lepra | 26 | | | |
| Aneurism of Aorta | | 3 | Elephantiasis | 6 | | | |
| Cephalalgia | | 24 | Inflammation of Ear | 8 | | | |
| Rheumatism | | 33 | Chronic enlargt. Kneejoint | 5 | | | |
| Scrofula | | 26 | Ditto Bursa Do | 2 | Total number of cases seen between Dec. and April 1842 | | 717 |
| Hydrocephalus | | 5 | Steatomatous tumours | 3 | | | |
| Epilepsy | | 7 | Abscess Antrum Maxillare | 1 | | | |
| Hysteria | | 2 | Gonorrhœa | 10 | | | |
| Chorea St. Viti | | 2 | Inflammation Testicle | 2 | | | |
| Dyspepsia | | 7 | | | | | |
| Paralysis | | 2 | | | | | |
| Ascites | | 1 | | | | | |

From this list it will be seen that the Abyssinians are exempt from but few diseases usually met with in other countries, though from the equable nature of their climate and the elevated region they inhabit, they may be considered a comparatively healthy race. There are however two diseases which are so extremely prevalent as to claim especial notice in

this report, I allude to Syphilis and Tænia, the latter, no case having come under treatment, not being included in the above abstract.

Syphilis called in Amharic "kitting," has from all accounts only been known in Southern Abyssinia during the last 40 years, but we were unable to obtain any information regarding the source of its first introduction into the country. The Gallas are still, generally speaking, exempt from the scourge, but it is at length beginning to attack the tribes bordering on the Amhara districts. Within the kingdom of Shoa, possessing no sure remedy for the disease, it has become extremely prevalent and is committing great ravages, attacking all ranks and ages from the lowest beggar to the immediate relatives of the Negoos, whilst infancy and decrepid old age offer frequent evidences of its destructive effects, the consequence of parental taint or the sequela of disease contracted in earlier years.*

It is met with in all its forms and the proportion of its several stages which came under notice will be better judged of from the following table.

Abstract of 300 Syphilitic patients seen at Ankober, between 1st December and 20th March, 1842.

| | Primary. | Affections of nose. | Affections of both throat and palate. | Affections of both throat and nose. | Nodes. | Syphilitic Ulcers (secondary, | Cutaneous Syphilitic Affections. | Syphilitic Rheumatism. | Total. |
|---|---|---|---|---|---|---|---|---|---|
| Males.. | 38 | 40 | 30 | 21 | 4 | 16 | 17 | 5 | 171 |
| Females | 13 | 31 | 21 | 28 | 4 | 23 | 9 | ,, | 129 |
| | 51 | 71 | 51 | 49 | 8 | 39 | 26 | 5 | 300 |

Exclusive of this list, 11 children and infants were brought suffering from syphilitic sores about the pudenda and nates.

* On several occasions priests, monks and even nuns, applied for medicine for this disease, who unwilling to acknowledge the infraction of their vows, were always prepared with some ready excuse for the contraction of the disease; by some it was said to have been produced by indulging too freely in the flesh of partridges, and by others from eating a portion of a diseased fowl, for they consider poultry capable of contracting the complaint.

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In all these cases, many of which were very severe, the pilula hydrargyri combined with opium, was found a mild aud certain remedy in stopping the ravages of the disease, the usual dose being from two to three grains of the blue pill, with $\frac{1}{4}$ grain of opium given night and morning, mercurial remedies even in small doses, speedily producing salivation in this climate. From the great number of applicants the stock of the pil. hydrargyri brought from India, though large, soon became exhausted, but a constant supply of a very respectable quality, was prepared from some reserve mercury for the artificial horizon, the pulp of dates being substituted for the conserve of roses. The Shoans, with the doubtful exception of their hot springs, have no remedy for this complaint, although there are several plants in their materia medica stated to possess anti-syphilitic powers.

As might be expected from the volcanic nature of the country, these thermal springs are very frequent; they are found at the village of Gossamee in Morabeite; Kowut, in the province of Gidem; Korari, about 10 miles S. E. of Alioamba; Makhfood, in the bed of the Jowahah river; Metak, about 3 miles south of Ankober; Finfinni, in the Germama plain; in the bed of the river Kassam in the district of Aden—and in the neighbourhood of the extinct volcano of Fontali. I am not aware of the existence of any mineral waters in Shoa.

Of these hot springs, the most important are at Gidem, which were visited by the Embassy in December 1841. They are called Tel-ambo and are situated near the village of Kowut in a dell of trachyte formation, through which flows one of the mountain sources of the Jowawah. These springs are four in number; in two of them the water issues near the river bed, from the bottom of small shallow pools in which the thermometer rose to 118°; they had no perceptible taste or smell, nor was there any deposit in their channels, which were lined with a black slimy vegetation. A third called Mariam and dedicated to the Holy Virgin, was, half cave, half bower, its entrance being secured by a rude door, the pool, the temperature of which was 115°, being about 10 feet long by 5 broad, with a depth of three or four feet; it was divided by a transverse beam into two compartments, in each of which we saw a naked victim of syphilis undergoing the process of maceration, which is continued for hours. A fourth called Aboo (the father) in which the thermometer rose to 120°, issued about five feet above the level of the brook, from below a stratum of conglomerate pebbles, traversing a sandstone bank; its water poured in a continuous stream from a small wooden trough, be-

neath which was placed a broad flat stone for the accommodation of the bathers.

The sanatory virtues of these springs are held in high repute, principally in syphilitic cases, but they are also used for rheumatism, in fever and some cutaneous affections. Each person who avails himself of them, pays a tax of one amooli ($2\frac{1}{2}d$) to the Negoos, for the collection of which they are placed under the charge of a petty Governor. They appear to be much frequented, as we saw many invalids, both male and female, who were undergoing the discipline of the baths, during which they reside in small temporary huts in the neighhourhood.

We also passed, at the end of a day's march in the district of Aden in April 1842, some hot springs in the bed of the river Kassam about ten miles to the northward of the volcanic mountain of Fontali, which is said to have been in an active state about forty years ago; their temperature was about 140°, and on reaching them our Abyssinian escort eagerly hastened to the shallow pools, in which, throwing off their clothes, they wallowed for a few minutes, whilst others were unable to bear the heat and merely dashed the water over their bodies. These springs are considered both a preventive and cure for syphilis.

In Northern Abyssinia, sarsaparilla, called in Amharic "wooshwah," is used for venereal affections and is said to be a remedy for all forms of the disease; it is reported to be brought from India and Algiers, and is procured at Massowah, where six dollars weight sells for one dollar, and as the quantity required to complete the cure costs at least twenty dollars, its use is restricted to the wealthier classes. During its use the patient is confined for forty days in a room raised to a high temperature, continually smoking the wooshwah, which is cut up small and its fumes exhaled from a common pipe. May not the power of eradicating syphilis in this mode of treatment, as also in the use of the thermal springs, depend upon their long continued sudorific action on the system?

The next disease deriving importance from its extreme prevalence in Abyssinia, is the Tænia Solium, called (wosefat,) which species of intestinal worm attacks all classes, and there are very few natives who are exempt from them. By themselves it is attributed to eating brindo or raw flesh, and they assert that those who abstain from this diet are free from the complaint, but that if it once makes its appearance it is seldom eradicated; the Abyssinians retaining the opinion that each joint is capable of reproducing a perfect worm.

Fortunately the country which is so peculiarly the seat of this

disease, possesses a most efficient remedy in the flowers of the Kosso, which tree being so indispensable to the health of the inhabitants is carefully preserved, and a group of them is always found in the immediate vicinity of the villages.* This valuable anthelmintic is taken by every individual regularly every two months, children commencing the discipline at the age of five or six years, and continuing it for the remainder of their lives. This frequent and indiscriminate use, however, gives origin to serious complaints, of which prolapsus ani is the most common; the great exhaustion following its violent action when injudiciously administered, sometimes even terminating fatally. The continued use of this drastic purgative, though necessary to the preservation of health, must tend to shorten the natural period of existence, for the Shoans are not a long-lived race, and instances of advanced old age are rarely met with.

Kosso (*Hagenia Abyssinica*) when in maturity, attains the growth of a moderate sized tree, its red racemes of blossom much resembling in form and distribution, those of the Horse Chesnut. These flowers are first dried in the sun, and all stalk and extraneous matter carefully removed, and are then pounded fine. The dose varies from six to eight drachms weight, according to the quality of the drug and strength of the person, and is drank early in the morning in a cup full of cold water; if kept mixed for any length of time its power is said to become deteriorated. It usually acts in the course of a couple of hours, the first evacuations being watery and the worm generally expelled by the third or fourth; during the time of its operation, abstinence from food or drink is enjoined, but afterwards in the evening, the patient is directed to eat freely of hot spiced dishes, commonly wotz or dillee, and drink mead or beer. Should five or six hours elapse without indication of the medicine having taken effect, it is recommended to eat a full meal seasoned with hot condiments, which is said to quicken its operation.

A favourable opportunity occurred of trying the effects of Kosso, on a European soldier of the escort who was troubled with the lumbricus teres, on whom it acted mildly, and effectually. Should it be considered a desirable addition to the materia medica of Europe, a plentiful supply of Kosso

* To mark the importance attached to this remedy, there is a village near Angolalla without a tree of this species in its neighbourhood, from which circumstance it has obtained the name of "Dewasa Kosso,"—which was explained as meaning, "may God give you Kosso."

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might be easily obtained at Massowah on the Red Sea, from the merchants of Abyssinia who visit that port, which is but a journey of five or six days from the country of its growth; or as it appears of a hardy character, and the climate of Abyssinia seems favourable to northern vegetation, the tree itself might perhaps be successfully introduced, by seed, into Europe.

Scrofula (Mishro) is another disease very common, but confined almost exclusively to the fair smooth skinned Islam females. Warmth of climate has usually been considered opposed to the production of this disease, but all the cases seen, have come from the warmer districts of the lower country; in the colder and more elevated regions of Shoa, it is almost unknown, and the coarse masculine Amhara women appear completely exempt from its attacks; as elsewhere it generally shews itself in chronic enlargements of the absorbent glands of the neck, which at length imperfectly suppurate, and are followed by extensive and indolent ulcers.

As scrofulous affections of the glands of the neck are the prevailing scourge of the delicate Mahomedan females of the lower districts, so bronchocele is equally common amongst the females of lighter complexion and slighter form, particularly the Gallas, of the more elevated tracts, and almost appears to be the result of the same diathesis modified by climate, the Amhara females being equally free from both these affections. Though producing considerable deformity, and sometimes attaining a very large size, these enlargements of the thyroid gland appear in no way to impair the general health, or interfere with the functions of life, and are seldom submitted to medical treatment, though in some few cases, a puncture has been made and the wound kept open, forming an issue by which the size of the tumour has been much diminished. Whilst a fair complexion, delicate skin, and slight configuration, evidently predispose to these enlargements, it is difficult to determine the exciting cause; the country in which they are most prevalent, is a highly elevated plateau generally from 8,500 to 9,500 feet above the sea, and possessing a dry and pure atmosphere; snow being unknown, its water cannot be adduced as a cause.

Fever, generally first in importance amongst tropical diseases, here also holds a conspicuous rank, but its ravages are mostly confined to the lower districts in whose fertile and well watered valleys, vegetation is rapid and of luxuriant growth, whilst the uncultivated tracts, clothed with a densely wooded jungle, and traversed by broad and overflooding rivers, abound with extensive swamps, which afford every requisite for the pro-

duction of malaria in its most malignant form, and these tracts are much dreaded, and when practicable, carefully avoided during the months succeeding the rainy season.

No opportunity offered of observing the character of the fevers in the lower country, but from the accounts received, they appear to be principally severe intermittents called by the Amhara "wobur," with a few and generally fatal cases of the remittent form, Amharic "mich." In the upper districts, fevers are by no means common; a few mild cases of the intermittent form occurred after the rainy season, which were easily subdued by the use of quinine, and which here, as in India, appeared to be distinctly influenced by the lunar changes.

Cholera, in Amharic "ougaret," in Tigri "kumbel," eight years ago (1834) raged violently in the lower districts of Southern Abyssinia, and was attended with a great mortality in the province of Gidem, Makhfood, Channoo, and Burhat. Its course is said to have been from north to south, first appearing on the frontiers of the Wollo country, and passing to the districts inhabited by the Galla tribes to the south and south-west, from whence most probably it penetrated to the unknown regions of central Africa. The more elevated regions of Shoa remained nearly free from the disease, a few isolated cases only appearing at Ankober and Angolalla. In character it appears to have resembled the Asiatic cholera, and been marked by vomiting, purging, and spasms, the cases usually terminating fatally in twenty-four hours.

In the following year 1835, a severe famine from a failure in the rains, was followed by a great mortality throughout the kingdom, Ankober having been half depopulated; but from the description of its mode of attack, it appears to have been of a dysenteric character, marked by a severe pain in the abdomen and frequent purging of blood, under which the sufferer usually sank in from eight to ten days.

Of Variola, the small pox, in Amharic (Fontana,) no cases have been met with, but it is said to be occasionally very prevalent, and to be attended with great mortality. On these occasions, on the disease first making its appearance, a boy affected with variola is selected, of pure blood, a slave not being admissible, he is strictly confined in a house and carefully secluded. On the pustules becoming fully developed, a large assemblage of people to the amount of hundreds, collect from the neighbouring villages for the purpose of being inoculated. The operator (not a priest) is chosen from the number, for his character of high rectitude, by whom the matter is collected from a number of pustules, and mixed

with honey in a small horn. The persons to be inoculated have an incision made on the fore arm with a razor, into which a small quantity of the variolous matter is introduced by means of a pen; a pledget of cotton is applied over this and the arm bound up. In seven or eight days the eruption appears, sometimes merely a few pustules, but frequently more severe and occasionally death supervenes. Many persons are seen with a well defined cicatrix on their arm from this operation, which in Amharic is called "kutavit," but regarding the period of its first introduction into Abyssinia they possess no tradition.

Soon after the arrival of the British Embassy in Shoa, the small pox was reported to have made its appearance near the northern frontiers, and the Negoos requested advice as to the best mode of stopping its ravages. A plentiful supply of lymph having been brought from India, a proposal was made, to visit the threatened districts, and introduce the practice of vaccination; but the offer was received with great coldness and suspicion, and declined until the disease should have shewn itself within the kingdom, and the subject was never afterwards referred to.

There are but few other diseases, requiring particular notice. Inflammatory affections are rare, with the exception of ophthalmia, which is generally met with in a chronic stage, and soon yields to cleanliness and the use of astringent collyria. A few cases of pulmonary affections were seen requiring active depletion, as also three or four instances of confirmed phthisis. During the cold foggy weather of the rainy season, catarrhs were common, for which the Shoans administered gruel, or hot mead seasoned with red pepper, on retiring to rest, which doubtless proves equally efficacious with the white wine possets and other cordial potions, so liberally recommended by the matrons of England.

Rheumatism is a frequent complaint, as might be expected from the cold and damp character of the climate, during several months of the year.

Affections of the heart also seemed more than proportionally prevalent, generally hypertrophy in persons with a narrow and badly developed thorax, and apparently occasioned by the accelerated circulation, required properly to oxygenate the blood, in the attenuated atmosphere of this elevated region. Four cases of aneurism of the aorta were also seen forming elevated pulsating tumours, in one protruding from the right side of the thorax, and in another having produced absorption of the upper portion of the sternum.

Epilepsy is by no means a rare disease, the sufferers being considered possessed with a devil. Amongst children were also seen several cases of

hydrocephalus, chorea St. Viti and marasmus, and three cases of lithiasis occurring in boys between the age of four and ten years; amongst which class of patients were two cases of inflammation and abscess of the hip-joint.

But few inhabitants of Shoa are free from cutaneous affections, induced by their unclean habits and propagated by the custom of sleeping together in close contact in a state of complete nudity; of these the most common are psora, herpes, and tinea capitis; but many cases of the more formidable order of lepra elephantiasis are seen in all their stages, from the simple decoloration of the skin, to the ulcerated swollen, and mutilated state of the extremities.* In one case of elephantiasis, the scrotum was enormously distended and formed an immense pyriform tumour descending to the knees.

Two cases of simple fracture of the fore arm, and two of the clavicle were treated, as also a very severe case of compound fracture of the tibia and fibula, in a woman who (in a fit of jealousy,) had also received from her husband several other severe sword-cut wounds. Several old and unreduced dislocations were brought for assistance, whose long standing rendered any attempt at reduction hopeless; and one recent case of dislocation of the elbow-joint in a boy, in which extension proved successful. An instance occurred of the lodgement of a bone in the esophagus, of three days' standing, the ejection of which followed the introduction of a probang.

Parturition is occasionally attended both with difficulty and danger, three cases of this description having come under notice, one of protracted labour, and two of malpresentation, one of which terminated fatally from exhaustion, after three days suffering. By the superstitious Abyssinians, these difficulties are attributed to the evil consequence of the shadow of an enemy, passing the house at the moment of conception. At the time of delivery, the woman is placed in a kneeling posture near the edge of an ulgur or cot, a couple of female friends or hired nurses attending to support her, and receive the child. The Shoans do not appear to be a prolific race; large families are uncommon, and few women are the mothers of more than three or four children.

THE PRACTICE OF MEDICINE amongst the Abyssinians of Shoa, is of a purely domestic character, there being no professed practitioners who

* Leprosy is not considered contagious by the Abyssinians, nor do they hesitate to associate with those afflicted with the disease.

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by a regular course of study, prepare themselves to alleviate the sufferings of disease. A few individuals have acquired a more extended knowledge of the supposed virtues of their drugs than others, whose precepts are held in high repute, but these are considered family secrets of esteemed value, and are with reluctance divulged; but more reliance is placed in the efficacy of charms, spells and amulets, than on medical treatment, save when recommended by the acknowledged superiority of European skill.

All ranks attempt to shield themselves from disease by the use of amulets, which sometimes consist of pieces of wood possessing some supposed secret virtue; shreds of dark blue paper carefully enveloped and worn on the arm, are considered a sure medicine for head-ache, whilst in the event of serious illness, threads of red worsted are bound round the toes and fingers, and the debtrar or scribe is applied to, who for a fee of from two to ten amoolis, (*5d* to *2s.*) inscribes a portion of the Scriptures on a narrow scroll of parchment, which is tightly rolled up in a red leather case and worn about the person, and many are seen with an accumulated collection of these preservations, suspended from the shoulder like a string of bandoleers.

Secret spells are also held in repute; should a person be attacked with fever, the head of a red cock is sometimes cut off, with certain stated rites, and its blood sprinkled on a road, when they believe that the disease will be transferred to the first person who crosses the infected spot. The Negoos himself on returning from one of his excursions having nearly fallen into one of these traps, was greatly enraged on the occasion, severely punishing the offender, and ordering that the treacherous custom should be discontinued in future.

Even in the collection of the simples which constitute the greater portion of their materia medica, certain forms are directed to be observed; a silver ring must adorn the hand with which some of these plants are gathered, others must invariably be plucked with the left hand, should the right be used, the virtues cease; whilst, in the collection of all, a fortunate day must be selected, or the labour is useless.

The following is a list of the plants in the highest estimation for their medicinal powers, with the systematic names of such as have been determined by Dr. Roth.

*List of Plants used Medicinally in Southern Abyssinia.*

| Amharic name. | Systematic name. | Properties. | Remarks. |
|---|---|---|---|
| Ashkoko Gooman... | ..... | Epilepsy. | |
| Woina gooft..... | ..... | Anti-Herpetic. | |
| Koret ..... | ..... | Abortive ..... | Also used in tanning. |
| Holgub ..... | ..... | Sore throat..... | A decoction is used as a gargle. |
| Tullinch ..... | Achyranthes ..... | Styptic. | |
| Ras Kimmur ..... | Leonotis. ..... | Purgative and Anthelmintic..... | A decoction drank with a little oil. |
| Toolt ..... | Rumex ..... | Abortive. | |
| Ya bug elat ..... | Thlaspi bursa pastoris. | Febrifuge. | |
| Lit ..... | Malva..... | For swellings..... | In fomentation. |
| Dora koos..... | Carduncellus ..... | Febrifuge..... | A decoction. |
| Enda ha hoola..... | Calanchoe Verea... | Asthma ..... | Is smoked. |
| Ekkool kassi..... | ..... | Boils. | |
| Lataffee..... | ..... | Ulcers ..... | For ripening buboes in the groin or axilla. |
| Eesa debtera..... | ..... | Cracked skin ..... | More particularly for the soles of the feet. |
| Cosho shilla..... | Onopordum ..... | Rheumatism ..... | A decoction used as a fomentation. |
| Tegoor tullinch .... | Achyranthes. ..... | Rheumatism | |
| Ahia endote..... | Phytolacca ..... | Syphilis..... | Seeds also used as a charm against hydrophobia. |
| Ya medur oomboi.. | Cucumis Africanus.. | Syphilis and Fever. | |
| Dedaho ..... | ..... | Syphilis. | |
| Kut khulla..... | ..... | Herpes. | |
| Cheffie ..... | ..... | Herpes. | |
| Seral buzzo ..... | ..... | Epilepsy. | |
| Kaloa ..... | Elaeodendrum..... | Purgative..... | Used in epilepsy. |
| Gizeemah ..... | ..... | Antispasmodic. | |
| Kumbo ..... | ..... | Epilepsy. | |
| Kuktung gimaro.... | ..... | Epilepsy. | |
| Leganien ..... | ..... | Epilepsy. | |
| Jooloolot. ..... | ..... | Febrifuge. | |
| Jikokot ..... | Myosotis ..... | Febrifuge. | |
| Misritch. ..... | Cornutia ..... | Febrifuge. | |
| Kantchil ..... | ..... | Syphilis. | |
| Kolquall..... | Euphorbia Abyssinica ..... | Syphilis..... | The sap is used. |
| Amararit ..... ... | ..... | Emetic. | |
| Tuccatri ..... | ..... | Emetic. | |
| Essa soi..... | ..... | Against snake bites. | |
| Ahmed madoo..... | Chenopodium ..... | Ulcers..... | Also used for cleaning metals. |
| Facsoi ..... | ..... | Febrifuge. | |
| Harbaridjo ..... | ..... | Febrifuge. | |
| Ya Simmur roos.... | ..... | Aphrodisiac. | |
| Cheffrik. ..... | ..... | Aphrodisiac. | |
| Dog..... | ..... | Aphrodisiac. | |
| Gooman. ..... | Brassica fruticosa.. | Ulcers ..... | A decoction is applied. |
| Embachoo ..... | ..... | Dislocations. | |
| Feela fitch..... | Amaranthaceæ..... | Astringent .... .... | For stopping purging in cattle. |
| Kosso ..... | Hagenia Abyssinica. | Purgative ..... | Also anthelmintic. |
| Kashamio .. ..... | Nageia ..... | Purgative ..... | The berries given to children. |
| Enkerdad ..... | Lolium temulentum. | ..... | Much dreaded as a poison. |
| Ashkila ..... | Smilax..... | Astringent. ..... | The wood is used as a tooth brush. |
| Adguar ..... | Melanea Verticillata..... | Purgative ..... | The berries. |
| Goolo ..... .. | Ricinus afer..... | Purgative..... | Hot, used medicinally. |
| Djodjo ..... | Scrofularia frutescens ..... | Febrifuge ..... | Also used as a charm against being robbed on a journey. |
| Lomi Shett..... | Acynos ..... | Aromatic. | |

The practice of surgery is equally rude and unadvanced as the science of medicine. The Shoans being a mounted race and frequently engaged in warlike expeditions, a rude mode of treating the more common accidents is known to all, and each warrior considers himself competent to assist his wounded comrade, whilst every village produces its proficient in the arts of bleeding, cupping, and the application of the actual cautery, which are freely used in many complaints. When questioned about their surgical operations, they relate a long list of marvellous cures performed, most of which however are so unworthy of credence, as not to deserve a record, though a few have been inserted to show the nature of their ideas on this subject.

In the treatment of recent dislocations, direct manual extension is at once had recourse to; but if the accident is of a few days standing, a poultice of the undigested contents of the stomach of a sheep is applied over the joint, or it is bound up in the leaves of the embachoo tree, and after a day or two, extension is attempted; but they are ignorant of the advantage to be derived from relaxing the power of the muscles by varying the position of the limb, nor does the number of the unreduced cases met with, speak highly of their knowledge in discriminating these accidents, or their skill in treating them.

In fractures, extension is made until the limb is ascertained to be of the same length as the other; short narrow splints are then applied, and the part bound up firmly until union has taken place. In a case of severe compound fracture of the tibia which came under notice, one of these splints had been applied directly over a projecting portion of the bone, which subsequently required the use of the saw before reduction could be effected.

A case was related in which a fracture of the leg in a man of high rank having united badly, producing lameness and deformity, the leg was laid on a board, and the bone rebroken in several places with a stone; the limb having been restored to its proper length, was again bound up in splints and continued extension kept up by suspending the leg from the wall, the patient having been kept on his back during treatment, and in twenty days a satisfactory union had been completed. They also say that in some severe comminuted fractures of the cranium, it is common to abstract the fragments and replace them with a corresponding portion of skull taken from a recently slain sheep or goat, over which the integuments are drawn, adhesion taking place, and no ill consequence following the introduction of the foreign portion of bone.

In incised wounds of any extent, the continued suture by needle and thread is generally used, or the edges of the wound are brought together, and thorns introduced through them at distances of about an inch, and thread then wound round them, as after the operation for harelip. In a severe lacerated wound of the thigh inflicted by the tusk of an elephant at Gidem, this rude contrivance was so effective in keeping the parts in apposition, that no alteration was required; a mixture of finely powdered Kossa with a gum resin called kurvi, is generally applied over wounds of this description.

In contused wounds where adhesion is not expected to take place, it is usual to fill the wound with "dillee," a stimulating condiment, compounded of red chillies, salt and garlic, for the purpose of promoting suppuration and the production of granulations. Amongst the Belooches of Scinde the same practice prevails, and in the treatment of their very severe sword cuts, the cure is usually commenced by the application of curry powder.

In a wound of the abdomen, through which the intestines protruded, which could not be returned, a small gourd was obtained, cut in half, and carefully shaped; within this the portion of intestine was lodged, the gourd was then introduced beneath the integuments which were drawn over it, adhesion took place, and the man, Ayto Gubroo, lived for several years after the operation. This is said to be by no means a rare instance of this mode of treatment having proved successful, wounds of this description being rather common from injuries inflicted by the spear.

To ulcers, a strong decoction of gooman, a coarse species of cabbage, is a common application; and in some indolent cases, I have seen the dross from the iron smelting furnace sprinkled in a state of fine powder over the sore. To burns and scalds they apply a solution of the common ink of the country, which is brought in cakes from the Somauli country, and appears to be a composition of mucilage of gum Arabic with soot or lamp black.

Bleeding is often had recourse to in fevers and severe head aches, and is performed by applying a stick across the mouth; a tight bandage is then fastened round the neck, and on the veins of the forehead becoming turgid, one generally in the mesial line, is opened with a razor and bleeds very freely; cupping is also a common practice, the incisions being made with a razor and suction effected by a horn as in India, the air being exhausted by the mouth through a small aperture in its upper end. In cases of inflammatory sore throat, it is common to introduce the fore finger and sca-

rify the lining membrane with the nail pared sharp for the occasion, which is followed by a copious effusion of blood.

Leeches are to be procured, but they are of small size, and inefficient for medical purposes, but most probably might be improved by proper culture.

Actual cautery is the usual remedy for rheumatism and various local pains; it is effected by producing ignition by the rapid friction between the palms of the hands, of a piece of light wood received in a small hollow of another portion, the ignited end of the stick being applied to the affected part; or a small pile of rag is placed over the spot, which is set on fire and allowed to smoulder down. It is a common practice to make frequent applications of cautery on the right fore arm, as they imagine by the contraction of the cicatrices, the muscles become more firmly bound, and the arm strengthened for the exercise of throwing the spear.

Teeth are abstracted by the common pincers of the blacksmith; if these fail, the offending tooth is punched out with a nail and stone. For tooth ache, they chew over the affected part, a small bag filled with the fresh leaves of hot and aromatic plants.

During the sojourn of the British Embassy in Shoa, its members and followers, amounting to above thirty individuals, natives of Europe, of Western Asia, and of India, enjoyed almost uninterrupted health; a few slight cases of fever, rheumatism, catarrhs and other complaints prevalent in the country occurred, and one severe dysenteric affection in a soldier of the escort, a relapse of disease contracted in India, but none deserving of particular notice. And in concluding this report it affords me great pleasure to state that during the two years absence of the Embassy, no death from natural causes has occurred, speaking highly for the healthy character of the climate of Southern Abyssinia, and a rare event in the history of African exploration.

## Article II.

## *Cases illustrative of the Pathology of the Diseases of Bombay.* By C. Morehead, M. D. Part II.*

Presented August, 1843.

Preliminary Observations. Though it must, to a certain extent, be admitted that the great attention which has been paid of late years in Great Britain and on the continent of Europe to the study of morbid anatomy, and the many excellent works which have been published in illustration of this department of pathology, have been the means of attaching to it too exclusive an importance;—still it is not to be disputed that the facts of morbid anatomy, viewed in their proper relation to the other essential facts in the history of disease, are of undoubted value; and it may be, perhaps, also, conceded, that they have not as yet been turned to the fullest account of which they are susceptible in their bearing on physiology, pathology and therapeutics.

If such opinions be, even only to a certain degree, correct they justify the great labour and time which have been bestowed by pathologists in Europe, in collecting and recording cases illustrative of the morbid anatomy of the diseases open to their observation; and they will explain the object which I have had in view in thus† attempting, to the extent of the opportunities which I have enjoyed, to add to the (comparatively,) very meagre records of the morbid anatomy of diseases as observed in India.

The general accuracy of the cases narrated in this, and in my former communication, may, I believe, be depended upon; for the subjects of them have been, with very few exceptions, under my immediate care, and the examinations after death and the record of the appearances observed

* Continued from the 2nd number of the Society's Transactions.

† Also, with a similar object, a paper published in the Edinburgh Medical and Surgical Journal for the month of April 1832, and another in the 1st part of the 7th volume of the Transactions of the Medical and Physical Society of Calcutta.

have been made by myself except in a very few instances and these, I think, have all been acknowledged.

In drawing up, from the Hospital diaries, the introductory summary narrative of symptoms, I have aimed to exhibit the prominent features of each case, and, more particularly, to detail those symptoms which have had an evident relation to the morbid appearances found after death, —keeping in view the importance of noting, when practicable, the first indications of the morbid actions which have led to the lesions of structure.

It has, moreover, been my endeavour, when circumstances permitted, to note any well ascertained facts of the previous history, as regard former disease,—or habits, as regard modes of life, of the individual,—bearing on the elucidation of the state of constitution existing at the time of attack of the particular disease. The former consideration has an important reference to the appearances, found after death, of the organs which may have been affected with disease at some previous period;—the latter tends to throw light on the character of the lesions likely to result, and is of essential consequence as guiding to a right course of treatment.

My object, however, has not been in every instance, merely to illustrate the pathology of the particular disease at the time present; but I have also endeavoured to keep in view questions of general pathology, and not altogether to lose sight of the occasional bearing of cases of disease on some questions of physiology;—and these objects have been present to my mind, more particularly, with reference to the following considerations.

1st. At different periods in the life of individuals, certain organs *(e.g.)* the liver, the thymus gland, the lungs, &c.—undergo certain changes in their anatomical structure, to adapt themselves to the varying degrees of necessity of their respective functions, to the animal system, at different periods of life. Such being an admitted fact in physiology,—is it not probable that the peculiar influences of different climates or other external agencies may produce varying degrees of necessity for the exercise of different functions,—tending to cause alterations of anatomical structure somewhat analogous? My belief is that the operation of this principle is traceable, and that it constitutes a subject of interesting and not unimportant discussion.

2d. To connect the appearances, found after death, of particular organs, with the well ascertained fact of these having at former periods of the life of the individual been the seats of disease,—is a very important branch of the study of morbid anatomy; and it is that department of the

subject which, in my judgment, has not yet been turned to the practical account of which it admits in the treatment of disease. For, if it appears very distinctly (which I believe to be the case) that considerable organic changes,—ulcerations, and thickenings of the tissues of important organs,—are recoverable from,—it then becomes a very essential consideration in the practice of medicine, to keep this fact constantly in view with the object of preserving the system in the condition which, when these changes have once taken place, will give to the altered tissues the best chance of recovering their natural state, to the extent of which they are susceptible. There can be no doubt that this law and the indication of cure proceeding from it, have been too much lost sight of; for, it may very justly be asserted, that frequently the treatment of local disease has been too exclusively directed to the prevention of organic changes in tissues, in forgetfulness that such treatment, after a time, tends to favor those very changes which, at an earlier stage, it is calculated to impede. Too little regard would also seem to have been given to the fact, that the kind of treatment which ought to be adopted with the view of repairing injuries, *e. g.* inducing the granulation of ulcers or the absorption of deposits of lymph, is in a great many instances altogether different from the treatment which is of avail in preventing these changes from taking place. Hence the injurious consequences which, under these circumstances, have too frequently resulted from depletion, and other antiphlogistic measures having been too actively adopted, and too long pursued, to the neglect of the important fact, that in the management of all such diseases, there is a stage when these measures should be altogether discontinued, and an opposite line of treatment (tonic) should be cautiously adopted; for, it is on the precision with which this stage is discriminated, that the chances of a successful result, from the exercise of the reparative powers of the animal system, depend.

3d. It may, I think, be assumed that the practice of examining after death the state of all the organs important to life, even though not having given indications of disease, is calculated to throw light on some questions of physiology. It is under this impression that the condition of the small intestines and of their contents is described in several of the cases, though there had not existed any indication of disease there, during life. Indeed there would seem to be good grounds for supposing that observations of this kind, viewed in relation to certain facts of pathology and of comparative anatomy, bear on certain questions regarding the functions of the liver and of the small intestines, not as yet, I believe, satisfactorily explained; nor, does it appear to me unreasonable to anticipate, however, much op-

posed to the current opinions of many Physiologists,—that such a line of enquiry will be found more likely to elucidate these questions, than a too transcendental application of the facts of animal chemistry.

It was, at one time, my intention to have postponed the publication of this report till I might be enabled to annex to the cases, the remarks on pathology and treatment which a consideration of them, in connection with those cases of similar diseases successfully treated, is calculated to suggest. On further reflection, however, it has seemed a more expedient course to maintain the series unbroken, and to make the practical remarks the subjects of separate communications which I hope to be able, at different times, to submit to the Society.

## Cerebral Diseases.

### *Fracture of the skull and concussion of the brain.*

Case xlvi.—*Fracture of the skull and of the ribs: much blood effused between the skull and dura mater.*

Thomas Davis, ætat. 38, a seaman, was brought by a Police Peon, to the General Hospital at 4 A, M. of the 16th May. It was stated that he had fallen from a window of the sailor's home, a height of 25 feet. On admission he was perfectly insensible; the pupils were dilated; the respiration stertorous and laboured; the pulse frequent and full, but compressible. There was slight bleeding from the left ear, but no apparent contusion of the scalp. He was bled to 6 ounces, when the pulse sank, and the vein ceased to bleed. On more minute examination, the anterior parts of the upper ribs on both sides were found to be fractured, and there was also subcutaneous emphysema, chiefly, on the left side between the nipple and the clavicle and ascending up the neck. He died at $6\frac{1}{2}$ A.M.

*Inspection* five hours after death. *Head.* Between the integuments and the pericranium, there was a layer of dark coloured blood effused. The coronal suture from side to side was forced open, and formed a fissure about a line in breadth. Just above the squamous suture on the left side, a fissured fracture in the parietal bone extended from the coronal suture, followed a curved line for about four inches, and passed into the occipital bone. From this fissured fracture others radiated, two towards the vertex, each about two inches long, and one downwards towards the temporal bone. There was no depression any where. On the inner surface of the left temporal bone, there were stellated fractures stretching across the base of the skull on that side.

For a space the size of the palm of the hand, and opposed to the coronal suture, the dura mater was separated from the bone by the space of three quarters of an inch, and that space was occupied by fluid, and coagulated blood. On the right hemisphere there were patches of extravasated blood resting on the pia mater. At the inferior surface of the middle lobe of that side, and also below the cerebellum, there was a considerable quantity, an ounce and a half, of fluid blood extravasated between the dura mater and arachnoid. The brain was healthy in structure.

*Chest.* The sternal end of the right clavicle was dislocated; all the true ribs on that side, were fractured close to their sternal junction. On the left side, the first and second ribs were fractured in different places; and between two of the fragments of the first rib the finger could be passed into the chest. The left lung was collapsed and there was a lacerated wound of the upper lobe, half an inch in length. In the left sac of the pleura there were about six ounces of fluid blood. The right lung adhered, throughout, to the costal pleura. The heart was healthy. The abdominal viscera were not particularly examined.

CASE XLVII.—*Extensive fracture of the upper part of the cranium with extravasation of blood on the surface and into the substance of the brain.*

Frederick Martin, ætat. 21, of the ship Asia, "*vespere*, 25th March, 1841." Is reported to have been found in the hold of the ship this morning at 4 A. M. lying on the ballast which consists of shingles. It is supposed that he must have fallen down into the hold a height of 15 feet about 8 P. M. of the previous night. Is reported to have been in a drowsy state since and occasionally delirious, and to have had leeches applied to his temples. There is ecchymosis and swelling of the eyelids of the left eye, with an œdematous boggy feeling of the scalp, chiefly however of the left side. He is drowsy, protrudes the tongue when asked, but does not answer questions. Tongue pretty clean; pulse 80, full; skin above natural temperature. He was bled and leeched and purgatives were given. At 10 P. M. the breathing was oppressed and he died at 5 A. M. of the 26th.

*Inspection* ten hours after death. *Head.* A considerable quantity of dark coloured blood was extravasated between the scalp and the cranium, chiefly on the anterior part and left side of the head. The sagittal suture, for half its length, was forced open and a fracture extended through the frontal bone to the left of the mesial line, gaping, throughout, to the extent of the sixth of an inch. This fracture extended to the orbit, thence through the orbital plate to the junction with the sphenoid bone. There

was blood extravasated between the skull and the dura mater, and also between the layers of the arachnoid. In the anterior part of the left hemisphere, just over the orbit, there was a dark clot of blood, the size of a walnut, which had broken down the cerebral substance and formed a cavity for itself.

*Chest.* The lungs were emphysematous.

*Abdomen.* The small intestines were laid open with the view of observing the contents which were abundant, thin mucus; in the greater extent tinged and intermixed with bile, where the intermixture was greatest, there, I think, the adhesiveness was least. The stomach was empty.

CASE XLVIII.—*Extensive fracture of the skull and extravasation of blood on the surface and into the substance of the brain. Coma coming on gradually.*

W. P. ætat. 26, was thrown from a buggy and pitched upon his head, and was brought to the European General Hospital shortly after the accident at 1 P. M. of the 8th November 1841. On the left side of the frontal bone there was commencing tumefaction but without discoloration, and over the occipital bone there was a small wound. The pupils were dilated. His manner was excited and there were intervals of drowsiness. The pulse was feeble and the skin coldish, and on two occasions a small quantity of blood was vomited. After a short time 60 leeches were applied to the temples, and as the pulse rose ʒ xviii of blood were taken from the arm. The head was partially shaved and cold cloths were applied and a purgative enema exhibited.

At 9 P. M. he had become insensible and the pupils continued dilated. Pulse 80, sharper and fuller; skin above the natural temperature; the bowels not opened. The urine was drawn off by the catheter. Some more leeches were applied to the temples, and croton oil was exhibited. He continued to lose ground; coma complete; breathing oppressed; and he died at 4 A. M. of the 9th, about thirteen hours after the accident.

*Inspection* 9 hours after death. *Head.* Underneath the integuments over the left side of the frontal bone, there was considerable extravasation of blood. The calvarium throughout its great extent was thin and diaphanous. A little to the left of the mesial line commencing above the frontal sinus, there extended a vertical fracture throughout the whole length of the frontal bone and part of the parietal bone and passing into the saggittal suture; the length of the fracture was about four inches, gaping in parts to the extent of the eighth of an inch. Near the level of the protuberance of the occiput, a fracture commenced in the

site of the lambdoidal suture of the right side, following the line of the suture to the foramen magnum.

Over the anterior and upper part of the convexity of both hemispheres beneath the dura mater, extensive coagula of dark coloured blood were extravasated; there were also considerable coagula over the orbital plates, below the anterior and middle lobes of the brain. In parts of the anterior lobes the substance of the brain was broken down, and small coagula of blood were extravasated. The fracture in the frontal bone passed across some of the ramifications of the meningeal arteries, where furrowing the bone.

CASE XLIX.—*Extensive fracture of the skull with extravasation of blood on the surface of the brain. Fracture also of the right scapula.*

John Nelson, ætat. about 39. Seaman H. C. Brig Tigris. At 8 A. M. of the 25th May, 1842, was brought to the General Hospital, having fallen from an upper window about half an hour before. On admission he was in a state of insensibility; the pupils were dilated; the right eyelid was swollen and ecchymosed; the skin was of natural temperature; the pulse was easily compressed. There was no fracture or displacement of any bone detectable on superficial examination. The head was shaved and cold applied. At 10 A. M. he was much in the same state, at times muttering to himself; the breathing was somewhat hurried; the pulse slow and compressible, and he had vomited some blood; there was slight tumefaction over the right parietal bone; cold affusion was used to the head without any good effect, and afterwards 35 leeches were applied to the temples. At noon the breathing was stertorous, and the pulse was firmer and fuller and the coma continued. He was bled to ℥xii. the cold applications were continued and a turpentine enema exhibited. The tumefaction over the right parietal bone increased; the breathing became more oppressed and stertorous; the skin became moist; the pulse lost strength; he died at 2 A. M. of the 25th.

*Inspection* ten hours after death. There was no laceration or abrasion of the scalp, but swelling over the right parietal bone and two slight abrasions, one at the top, the other at the back part, of the right shoulder. No other external injury.

*Head.* Between the scalp and the bone over the right temporal and parietal bones, there was considerable extravasation of blood. From a little in front of the protuberance of the parietal bone, a fracture extended to nearly the coronal suture, thence it extended vertically downwards at

right angles, passing through the squamous suture and the squamous portion of the temporal bone to the level of the zygomatic arch; thence radiating to the base of the skull under the anterior part of the middle lobe of the brain. The great part of the squamous portion of the temporal bone was depressed about an eighth of an inch, and lower down the fractured fragments were loose and easily detached. Between the dura mater and the fractured part of the skull, there was a large quantity of dark coagulated blood, and the brain at that site was, in consequence, depressed and flattened; the substance of the brain was uninjured. The calvarium was throughout thinner than is usual, but to no very marked extent.

*Chest.* Old adhesions of the pleura; otherwise viscera healthy.

*Abdomen.* The colon was distended with air; the stomach was very nearly empty; the mucous coat was dark grey, and rather soft towards the cardiac end, apparently however from putrefaction having commenced.

The right scapula was fractured in several places, comminuted in the part of the bone above its spine; and there was a transverse fracture below the spine, close to it, and extending almost entirely across the scapula commencing at the base.

CASE L.—*Fissured fracture of the occipital bone and base of the skull; effused blood general on the surface of the brain; caused by a fall from the main yard on deck.*

Peter Mc'Allen, ætat. 30, seaman of the ship Eucles, was brought to the European General Hospital at 5 P. M. of the 22d December 1842; said to have fallen two hours previously from the main yard of the ship on the deck, pitching on the left side. He was taken up in a state of insensibility, bleeding from the right ear. At the time of the accident, he was bled at the arm to the extent of six ounces. On admission he was quite comatose with stertorous and convulsive respiration and tracheal rale. Pulse very compressible and sinking; skin coldish. There was a slight contusion over the left eye-brow, but no further injury of the head was apparent. No fracture of the ribs or bones of the extremities was detected on cursory examination. Sinapisms were applied to the feet, and cold applications to the head. At $6\frac{1}{2}$ P. M. there was reaction; the skin above natural temperature; the pulse fuller and firmer; the coma and stertor continued. 48 leeches were applied to the temples; a turpentine enema exhibited, and the cold applications to the head were continued. He died about $7\frac{1}{4}$ P. M.

*Inspection* fifteen hours after death. *Head.* On the left side of the occipital bone about the level of the protuberance, there was a fissured frac-

ture which extended downwards to the left side of the base of the skull. Over the entire surface of the brain, superior surface, and base, there was a thin layer of blood effused, apparently, external to the arachnoid membrane and seeming to proceed from the right lateral sinus. The brain was healthy in substance.

*Chest.* The 2nd rib of the left side was fractured. No other fractures.

CASE LI.—*Concussion of the brain, lacerated wound of the scalp, no fracture of the skull or extravasation of blood in the head. Fracture of the sternum, extravasation of blood into the anterior mediastinum, making pressure on the lower part of trachea.*

Archibald ——— ætat. 42, Chief Officer of the ship Carnatic, was brought to Hospital at 1 P. M. of the 21st March 1842. It was stated that he had fallen from the deck to the bottom of the hold of the vessel, a height of about 19 feet, and had pitched upon his head. On the vertex, there was an extensive stellated lacerated wound, exposing the bone and surrounded by considerable extravasation of blood. The pupils were dilated; the pulse was of moderate strength; and there was present a state of low delirium. He had been bled from the arm to a small extent before admission. The wounds were dressed and cold cloths applied to the head. He died about two hours and a half after admission into hospital.

*Inspection* fifteen hours after death. *Head.* Over the vertex, there was an extensive lacerated and stellated wound exposing the bone; and between the bone and integument, for some distance round the wound, there was extravasation of a thin layer of dark blood. A good deal of blood oozed from the vessels on separating the calvarium from the dura mater. No blood extravasated on the surface, or into the substance, of the brain. There was slight effusion of serum on the upper surface between the arachnoid and pia mater, and a little more than the usual quantity of serum in the lateral ventricles. The substance of the brain was healthy and there was no fracture of any part of the skull.

*Chest.* Between the 2nd and 3rd ribs, the sternum was fractured across, and a good deal of dark blood was extravasated into the cellular tissue of the anterior mediastinum, making pressure on the lower part of trachea. The lungs did not collapse and were œdematous posteriorly; there was no effusion into either sac of the pleura. The pericardium, the heart, and great vessels, were uninjured.

The abdominal viscera presented no external marks of injury or disease and there was no effusion into the cavity. The stomach contained

a small quantity of half digested food, and the mucous coat was healthy. There was a fracture of the left scapula.

CASE LII.—*Concussion of the brain; vessels of the pia mater turgid; serous effusion between the pia mater and arachnoid membrane.*

William Parry, ætat. 28, seaman. Whilst the ship was in dock, he fell from the deck into the dock, a height of about thirty feet. The bottom of the dock was muddy, and this seaman was immediately after his fall, found in a state of insensibility, with his face immersed in the mud. He continued insensible for some time, and was brought to the hospital at midnight of the 18th Sept. 1839, about two hours after the occurrence of the accident. When spoken to, he answered but not coherently, and there was an increasing tendency to drowsiness. There was no contusion of the scalp. There was an oblique simple fracture at the middle of the bones of the right leg. He was bled, but the pulse sank rapidly under the detraction of blood. The respiration became hurried and the pulse frequent; he passed into coma and died at 2 A. M.

*Inspection* six hours after death. Body stout. There were livid sugillations on the posterior part of the trunk, but no bruise or contusion in addition to the fracture of the bones of the right leg.

*Head.* No contusion of the scalp or injury of the bones. On separating the calvarium from the membranes, much dark fluid blood flowed from the vessels. The vessels of the pia mater on the convex surface of the brain were very turgid with black blood, and there were extravasated streaks of blood here and there. There was also effusion of serum between the arachnoid and pia mater, and at the base of the skull to the extent of 2 ounces. There was no laceration of any part of the brain, or extravasation of blood, in addition to that already noted.

*Chest.* The lungs were * emphysematous and did not collapse. The heart was healthy. In the larynx close to the rima glottidis, were traces of the mud which must have been inspired, whilst he lay at the bottom of the dock.

* Throughout this series of cases, the term "emphysematous," has been used to express the fact, that on opening the cavity of the chest the lungs did not collapse. This use of the term is certainly not strictly correct, and I observe that at page 519 of the 7th volume of the British and Foreign Medical Review, it is proposed to use the word "inflation," to express the fact—I have thought it better to leave the term used in the original report and to offer this explanation of the sense in which it is applied.

*Abdomen.* The viscera, with the exception of the kidneys, were healthy and these had partially undergone the yellow degeneration. The mucous coat of the stomach was healthy with the mucous glands very distinct. It contained some undigested meat intermixed with dark looking matter, probably the mud of the dock which had been swallowed whilst he struggled at the bottom.

## *Apoplexy.*

CASE LIII.—*Apoplexy with sanguineous and serous effusion.*

William Johnston, ætat. 35, a pensioner of slender frame, sallow complexion and of very intemperate habits, was on the afternoon of the 17th April 1839, admitted into the General Hospital in an apoplectic state. There was frequent convulsive twitching of the mouth; the respiration was hurried; the pulse 100 and small; and the pupils contracted. A vein was opened in the arm, but as the pulse sank rapidly under the flow of blood it was again tied up. Leeches were applied to the temples; he was cupped on the back of the neck; a purgative enema was exhibited and sinapisms were applied to the feet. He died at 6 P. M.

**Inspection* sixteen hours after death. *Head.* On the surface of the pia mater of the anterior portion of the middle lobe of the left hemisphere, there was a clot of coagulated blood; and underneath it, the substance of the brain was of a deep red colour, and softer than natural; there was also a considerable quantity of fluid blood effused over the pia mater, where it covers the posterior portion of the brain; and there was extensive effusion of serum into the ventricles and at the base of the skull.

*Chest.* The heart was in a state of atrophy and of a pale colour. The lungs posteriorly were extensively infiltrated with blood.

*Abdomen.* The liver was of a pale buff colour. The other viscera were not examined.

CASE LIV.—*Simple apoplexy; congestion of the vessels of the membranes of the brain.*

Andrew Thompson, ætat. 20, steward of the ship Chusan, was admitted into the European General Hospital on the evening of the 4th November 1841. It was stated that he had been found, after trifling ail-

* I saw the patient before death, but was not present at the inspection. This report is extracted from Dr. Bird's statement.

ment on board ship, on the evening of 2d instant, in a state of insensibility. He was then largely bled from the arm and by leeches, and a blister was applied to the nucha. He had continued, and was, on admission, in a state of complete coma; the conjunctiva of the eyes was vascular, and though the pupils, partially answered the stimulus of light, they were contracted. The pulse was 120, slightly irritable, and very easily compressed; the skin was covered with moisture; the abdomen collapsed and supple; the respiration regular and not oppressed. Is said to have been subject to convulsive fits. The head was shaved, a blister was applied to the scalp and sinapisms to the feet. On the morning of the 5th, the coma continued; there was constant agitated movement of the arms or legs; the pulse was 130 and feeble; the skin was hot; and the urine was passed involuntarily in bed. At the evening visit there was less drowsiness, and the tongue was for the first time protruded when he was desired to do so, it was white and furred. The eyes continued vascular and the expression very vacant, and the features collapsed; pulse rapid and feeble; skin coldish; abdomen collapsed; there was constant tossing movement of the arms and flexion and extension of the legs. Chicken soup, wine and sago were given; but he continued to sink and died on the morning of the 6th.

*Inspection* ten hours after death. *Head.* The vessels of the pia mater and of the choroid plexus were considerably congested, even to their minute ramifications. On slicing the substance of the brain, there appeared a greater number of bloody points than is usual, but there was, in no part, softening or other disorganization.

The viscera of the chest and abdomen were healthy.

CASE LV.—*Simple apoplexy; slight congestion of the vessels of the membranes of the brain; no increased serous effusion.*

David Grey, ætat. 30, carpenter of the ship Harmony, a man of full habit, was brought to the European General Hospital at 3 P. M. of the 25th June 1843. It was reported that he had been ailing on board for two or three days previously with slight febrile symptoms, for which some remedies had been used; that on the early part of the day of admission he had been somewhat delirious, and that while near the hospital had been seized with a convulsive fit followed by coma. On admission he was completely comatose with contracted pupils and slight stertor; the pulse was frequent, moderate and easily compressed. The head was shaved and cold affusion used, he was cupped on the nucha to ℥x. and 48 leeches were

applied on the temples and a turpentine enema exhibited. The stertor increased, the breathing became oppressed and the surface of the body pungently hot, and he died at 7 P. M.

*Inspection* of the head twelve hours after death. There was very slight congestion of the vessels of the membranes; there was no increased effusion of serum into the ventricles, or on the surface of the brain; there was about an ounce of serum at the base of the skull.

CASE LVI.—*Serous apoplexy after excesses in drinking, considerable serous effusion between the arachnoid and pia mater and at the base of the skull.*

Mr.———, Commander of the Ship———, ætat. 36, was admitted into the General Hospital, on the 20th May 1839. The skin was cold, the pulse feeble; there was drowsiness with flushed countenance and suffused eyes. It was reported, that he had just returned from sea, and it was supposed that he had been drinking to great excess. The head was shaved and a blister was directed to be applied to the nucha. Shortly afterwards, he became affected with vomiting, attended with cramps of the extremities; the skin was cold and damp, and the pulse thready. A sinapism was applied to the abdomen and to the feet; and brandy with tinct opii. 3ss. was given, and the brandy was directed to be repeated. At 1 P. M. there had been no recurrence of vomiting, there had been no purging, but the cramps continued frequent, the thirst was great; the skin cold and damp; the pulse imperceptible; the eye sunken, and respiration laboured. Without having become comatose, he died at $1\frac{1}{2}$ P. M.

*Inspection* four hours after death. Body stout. *Head.* On separating the calvarium from the dura mater, about six ounces of dark coloured fluid blood flowed from the vessels. The vessels of the pia mater were turgid and at the posterior part of the lobes the convolutions were veiled by abundant effusion of serum. There was serum also at the base of the skull and it flowed from the theca vertebralis.

*Chest.* The lungs were quite collapsed and the heart was healthy.

*Abdomen.* The liver was pale and considerably enlarged. The mucous coat of the cardiac end of the stomach was of crimson tint, but was not softened; that of the body of the stomach was mammillated and thickened. The end of the ileum was laid open, its contents were dark green and tarry; the mucous glands were enlarged and distinct. The transverse colon contained yellow coloured fluid; the follicles were distinct but

their orifices not evident. There was no enlargement of the mesenteric glands. The kidneys were healthy.

*Remark.* In ignorance of the early history of this case, the question arises, was it a case of Cholera of which there were instances at the time occurring in the harbour; or was it delirium tremens, or serous apoplexy, the consequence of the excesses in drinking to which he was known to have been addicted. From the nature of the contents of the end of the ileum I gave it as my opinion that he did not die of Cholera.

CASE LVII.—*Serous apoplexy after exposure to the sun in a man of intemperate habits; serous effusion in the head and opacity of the arachnoid. Commencing disease of the kidneys.*

J. E. W. the Chief Officer of a ship, was admitted into hospital at 9 P. M. of the 12th August, in a state of perfect coma; the breathing was stertorous and there was convulsive agitation of the arms and legs; the pulse frequent and small; and the skin above the natural temperature. He died about 2 hours after admission. It was stated that he had been seized with a fit at 2 P. M. and had been bled to ℥xx. at 7 P. M.

*Inspection* eight hours after death. The body was of moderate stoutness. From between the dura mater and arachnoid membrane, serum escaped; there was also a thin veil of serum between the arachnoid and pia mater at the depending parts of the posterior lobes; and a greater than natural opacity and thickening of the pia mater and arachnoid on the convex surface of the brain. There was no great congestion of the vessels of the membranes, but there were numerous bloody points observable on incising the brain; and there was about one ounce and a half of serum at the base of the skull.

*Chest.* The posterior part, and chiefly the lower lobes of the lungs, were œdematous and gave out much frothy serum when incised; the heart was healthy.

*Abdomen.* The contents of the stomach consisted of half a pint of brown turbid fluid, in which undigested portions of meat and vegetables floated. The mucous coat, greyish in colour and sound in texture. The liver was healthy. The cortical part of the left kidney was of deep chocolate red colour, with buff streaks. The cortical part of the right kidney was of yellowish tint with red striæ. The bladder was moderately distended with urine. The other viscera presented nothing worthy of note and were not minutely examined.

At the Inquest held on the body of this individual, it appeared that his habits were intemperate, that he had been drinking to excess and exposing himself to the sun, and had been seized with convulsions which terminated in coma.

CASE LVIII.— *Apoplexy after free drinking, two ounces of serum at the base of the skull and a thin veil of serum over the convex surface of the brain.*

William Williams, ætat. 30, a seaman, was brought to the General Hospital at 10 P. M. of the 17th May 1842, in a state of insensibility. It was stated by his comrade who accompanied him, that he had been living on shore for some days and drinking to excess, but to no great extent on the day of his admission. The head was shaved, cold affusion, and purgative enemata were used. In the course of the night there were several convulsive fits and on the morning of the 18th he was in a state of complete coma with stertorous breathing, and inability to swallow; the pulse frequent and small, and the skin pungently hot. The cold applications were continued and a blister was applied to the nucha. At noon the coma was not so profound; the pulse was somewhat more developed; and the skin was not so pungently hot. A purgative enema with oil of turpentine was directed to be exhibited. The scalp was washed with diluted acetic acid and a large blister was applied. At the evening visit the drowsiness was somewhat less, but the pupils were very dilated, the pulse continued frequent and small, and the pungent heat of skin had recurred. On the morning of the 19th he continued much in the same state, with exception that the skin was cooler and the pulse still feebler. At the evening visit the pulse had still lost strength; there was present muttering delirium, and he died at midnight.

*Inspection* seven hours after death. The body was stout.

*Head.* Over the convex surface of the brain there was a thin veil of serum and there were two ounces of a similar fluid effused at the base of the skull, but there was no increased quantity in the lateral ventricles.

*Chest.* The viscera were healthy.

*Abdomen.* The colon was much distended with flatus, and the stomach was contracted. The liver small, adhered to the abdominal parietes and presented an irregular and puckered surface, but the structure of the organ was tolerably healthy. The omentum was loaded with fat. The kidneys were healthy.

CASE LIX.—*Apoplexy from drinking, in a man of very dissipated habits; slight congestion of the vessels; no increased serous effusion.*

James Mann, ætat. 33, seaman of the ship United Kingdom, was found on the road in a state of intoxication with a superficial wound over the right parietal bone, and was brought to the General Hospital on the 17th May, 1842. He was discharged cured on the 2d June; was re-admitted on the evening of the 6th June, suffering from the effects of a debauch and was discharged on the 8th. On the 27th June he was found on the road in a state of coma and brought to the hospital, and died about an hour after admission.

*Inspection* sixteen hours after death. Livid sugillations were observed about the arms and the posterior part of the trunk, but no marks of contusions or bruises any where.

*Head.* There was slight congestion of the vessels of the pia mater but no increased effusion of serum in the ventricles or on the convex surface of the brain. There was about an ounce of serum at the base of the skull and rather more than the usual number of bloody points were visible on incising the brain.

*Chest.* Old adhesions of the pleura of both sides. The lungs and heart were healthy.

*Abdomen.* Liver of palish grey colour but tolerably healthy in texture. In the stomach there were about 8 ounces of reddish fluid without perceptible spirituous odour. The mucous coat of the cardiac end of the stomach was of a reddish colour and was somewhat softened in texture but not pulpy. The other viscera appeared healthy.

CASE. LX.—*Amentia. General torpor; the vessels of the pia mater very turgid with blood; about one ounce and a half of serum at the base of the skull.*

A Midshipman of the Indian Navy, ætat. 24, of stout frame and florid complexion and who at different times was reported to have lived freely, was, after exposure to the weather and to the heat of the sun, whilst in the active discharge of his duties, affected with constipation, indigestion, headache, and slight febrile symptoms. Under the use of mercurial purgatives his health was improved, but the bowels continued disordered and he complained of determination of blood to the head. On the 6th April 1839,

a marked change of manner was observable, he did not acknowledge his friends, he refused to answer questions, and he sat with a vacant downcast expression of countenance. On the 7th, the pulse being 98 and full, the countenance flushed, and the pupils dilated, he was bled to 16 ounces, and had the head shaved, 6 dozen of leeches applied, and gr. 15 of calomel exhibited, and then was sent to the General Hospital. He was found sitting with a fatuous expression of countenance and gave no answer to the questions addressed to him. As the pulse continued full and firm, he was again bled, and the fulness and firmness of the pulse were reduced after the loss of 16 ounces of blood; a cathartic draught was ordered which he would not take, and a purgative enema was in consequence exhibited; a blister was applied to the back of the neck; a drop of croton oil ordered, and to be repeated after three hours unless the bowels were previously freely moved. From the 8th to the 13th the symptoms varied little and were as follows:—there was little sleep, but no restlessness; the expression of countenance was heavy and vacant; he did not answer questions, but seemed to apprehend what was said; when asked he tried to protrude the tongue, but was unable to open the mouth for more than half an inch, never protruded more than the tip of the tongue and then retracted it quickly; took no food, drink, or medicine, probably from inability to swallow it, for when put into the mouth it trickled out at its angles; skin generally cool; the pulse ranged from 80 to 100 and was soft; the bowels were kept free by enemata; the urine was passed freely and frequently in bed; the tongue was not furred. The treatment consisted in the use of purgative and turpentine enemata; the tepid bath with cold affusion to the head; the blistered surface on the back of the neck was dressed with an ointment containing muriate of morphia; and latterly enemata of chicken soup were exhibited. On the 12th, the pulse had lost much of its strength, and on the evening of the 13th it was feeble and unsteady; there was slight heat of skin and for the first time he answered some questions in a feeble voice and complained of general pain. Early on the morning of the 16th after having rested quietly during the night, he was reported to have passed a copious evacuation in bed, and to have died immediately afterwards.

*Inspection* nine hours after death. *Head.* The vessels of the pia mater were very turgid with dark coloured blood all over the surface of the brain; and the substance of the brain when incised was dotted over with bloody points, but its texture was natural. There was no increased effusion in the ventricles, but there was about an ounce and a half of serum

at the base of the skull, and a thin layer between the arachnoid membrane and the pia mater on the convex surface of the brain.

*Chest.* The viscera were sound and not congested with blood.

*Abdomen.* The liver was dark coloured and the gall bladder turgid with bile. There were marbled red patches on the mucous coat of the stomach, but apparently from passive congestion. The kidneys and other abdominal viscera were healthy.

## *Delirium Tremens.*

CASE LXI.—*Delirium tremens. Coma two hours before death. Six ounces of serum in the ventricles and at the base of the skull.*

A Seaman of stout habit, ætat. 34, formerly the mate of a ship, was brought to the General Hospital on the evening of the 21st May, after he had been drinking to excess for some time. On admission, his manner was restless, hurried and abrupt; the hands were tremulous but he was coherent in his replies. Tartar emetic solution with tincture of hyosciamus was given every second hour. He did not sleep, but on the morning of the 22nd he was more steady; the pulse was good; the skin warm, and the tongue slightly furred. Cold affusion was directed to be used, and to be repeated at noon; and the antimonial solution with tincture of hyosciamus was continued, and four ounces of wine were directed to be given. At the evening visit there was much starting of the arms, but he was quite coherent; ℞ colomel gr. iv. opii gr. ii. tart. antimon. gr $\frac{1}{4}$ at bed time. He was restless all night, walking about and talking incoherently and on the morning of the 23rd, he continued restless and labouring under illusions relative to his profession; pulse frequent and soft. The cold affusion was directed; the antimonial solution and tincture of hyosciamus were continued every hour, and an ounce of brandy was directed to be given every second hour. He continued restless and delirious, and made several attempts to escape, till about 1 P. M. when he passed copious watery feculent evacuations, involuntarily, and became comatose. At 2 P M. the skin was pungently hot; the pulse rapid, and feeble; the coma complete and attended with stertorous and oppressed breathing: he died at 3 P. M.

*Inspection* fifteen hours after death. The body stout.

*Head.* There was no congestion of the vessels of the pia mater. The convolutions of the convex surface of the brain were veiled by serous effusion, and the arachnoid membrane was milky and thickened. There

were about three ounces of serum in the lateral ventricles and the communication between them was free and open ; at the base of the skull, there were also about three ounces of serum.

*Chest.* The lungs were emphysematous and did not collapse. The heart was healthy and empty.

*Abdomen.* The abdominal viscera were loaded with fat. There was a small inguinal omental hernia on the left side ; the omentum adhered firmly to the inner ring and thus prevented the entrance of any portion of the gut into the sac. The cardiac end of the mucous coat of the stomach presented dark red extravasated patches, but its texture was nearly natural ; the other viscera were not particularly examined.

CASE LXII.—*Delirium tremens. Delirium passing into coma; no increased turgescence of the vessels of the brain ; about two ounces of serum in the cavity of the cranium.*

John———, ætat. 58. Captain of the ship———, applied at the hospital on the night of the 8th April 1841 for admission. He stated that he had just arrived from sea, that he suffered from constant sense of numbness of the fore part of the lower extremities commencing at the crest of the os ilium and extending to the feet. There was no tumefaction or deficiency of muscular power and no pain of the loins. On the morning of the 9th the hands and tongue were tremulous, but he was quite rational. At the evening visit he was very tremulous, he took four grains of blue pill, and two of opium at bed time. He did not sleep, and on the 10th the tremors continued, without delirium; and the sense of numbness of the legs was less complained of. He took camphor mixture with spirit. æther. nit. repeatedly during the day; also six ounces of wine. Towards evening he became wandering and delirious. The skin was cold and the pulse feeble. The head was shaved and a blister was applied to the nucha; grains four of blue pill and gr. iss. of muriate of morphia were given at bed time. The night was passed without sleep ; on the morning of the 11th he answered questions rationally ; the tongue was less furred ; the skin was cool and the pulse 80, soft and feeble; urine scanty. Effervescing draughts with spirit. æther. nit. ʒi. Brandy ʒiii. tinct. opii. min. xv. were given every second hour. At the evening visit the tremors continued and he rambled in his replies to questions ; he was ordered port wine ʒiss every second hour, for three doses; then opium grs. ii every second hour for three doses. He did not sleep but was

troublesome during the night. On the morning of the 12th, he continued tremulous and wandering; the pupils were more contracted; pulse feeble; skin of good temperature. The cold affusion was ordered and afterwards mist. antimon. ℥iss. and tinct opii ℥iii. and should he not sleep in two hours, the cold affusion to be repeated and followed by mist. antimon. ℥iss. and tinct. opii ℥ii. The affusion was twice used and the draught twice given, there was no sleep. At noon, he was constantly agitated and starting from his cot; pupils more contracted; scalp hot; pulse 120, feeble; constant muttering; urine scanty. Cold cloths were ordered to the head; camphor mixture ℥iss. spirit. æther. nit. ℥i. tinct. cantharidis min. x. every second hour. At the evening visit he was more drowsy with tremulous agitated movement of the hands and rolling of the tongue within the lips; pupils more contracted; skin above the natural temperature and dry; pulse 128, better developed; 8 ounces of clear urine had been passed, not involuntarily. A blister was ordered to the scalp; sponging of the surface of the body whilst the temperature was increased; and the draughts of mist. camphor. spirit. æther. nit. and tinct. cantharidis were continued with the addition of ℥iv. of antimonial mixture. He became more drowsy; the breathing became oppressed; the tremulous agitation of the hands and the twitching of the muscles of the face continued; and he died at midnight.

*Inspection* six hours after death. *Head.* There was no increased turgescence of the vessels of the membranes, but considerable effusion of serum at the depending parts, underneath the arachnoid membrane; about three drachms in the lateral ventricles, and an ounce and a half at the base of the skull.

*Chest.* Thoracic viscera healthy.

*Abdomen.* The small intestines were in a great measure covered by the colon; the ascending colon was contracted; the transverse dilated; the descending colon was contracted; then the sigmoid flexure distended reached across the abdomen almost to the cæcum. About two feet from the end of the ileum, there was a cæcal appendage standing at right angles from the free side of the gut, about three inches long and of diameter equal to that of the gut; the mucous coat that lined it, was perfect. The liver rather enlarged was of pale buff colour. The mucous coat of the cardiac end of the stomach was marbled dark red but the texture of the coat was healthy. Kidneys healthy.

CASE LXIII.—*Delirium tremens*; *moderate turgescence of the vessels of the membranes*; *serous effusion in the cranium*; *liver mottled buff.*

——Whitfield, ætat. 38, a Boiler maker who had been at different times in Hospital ill with bowel complaint. He was a stout man of intemperate habits, and was admitted with delirium tremens after excess on the 18th May 1840. It was chiefly marked by tremors of the hands and tongue and want of sleep, but no delirium. He had calomel with opium or muriate of morphia, and he seemed to be improving. On the night of the 19th he had 8 grains of calomel and muriate of morphia grs. iss; was reported to have been slightly delirious and was found comatose at $3\frac{1}{2}$ A. M. of the 20th; and died shortly afterwards.

*Inspection. Head.* Turgescence of the vessels of the membranes was moderate; the substance of the brain when incised shewed bloody points; there was a thin veil of serum on the convex surface of the brain and about an ounce at the base of the skull.

*Chest.* The lungs did not collapse; the anterior part was emphysematous and the posterior congested with dark coloured blood. Heart healthy.

*Abdomen.* The liver, enlarged, filled the epigastrium and part of the left hypochondrium, and was very pale in colour and mottled buff. The mucous coat of the stomach was of leaden grey colour, and marbled red at the cardiac end; the texture of the tunic was natural. The intestines distended with gas, were natural. The kidneys were smaller and more lobulated than natural; the cortical part was natural, but the fat seemed to pass from the concave surface and, in a layer of two lines thickness, occupied the spaces between the calices, and seemed to encroach much on the tubular portion.

CASE LXIV.—*Delirium tremens fatal by convulsion and coma*; *bullæ of air in the vessels of the membranes of the brain*; *mucous glands at the end of the ileum distinct.*

James Alexander, ætat. 28, 2nd class Engineer, a stout man who had been two months in Bombay, and had been leading a most intemperate life, was admitted into hospital on the 19th September 1840. His countenance was flushed; conjunctiva vascular; tongue and hands tremulous. Brandy was given; cold affusion was used to the head; and tinct. opii. ʒiss. given at bed time: no sleep. On the 20th, antimonial mixture with tincture of hyosciam us and tinct. muriat. morph. á ʒss. every two hours.

no sleep. Calomel gr. iv morphiæ muriat. gr. i. h. s. 21st, no sleep; manner more hurried; for the first time, slight incoherence; pulse and skin good. Cold affusion, antimonial mixture ℥ iss. Tinct. opii ʒiiss. no sleep. After two hours, antimonial mixture ℥i. Tinct. opii. ʒi. *Vesp.* no sleep; more incoherence; pulse moderate, effervescing draught and brandy for 3 doses, then affusion followed by antimonial mixture ℥iss. tinct. opii. ʒiii, and after two hours, again affusion and tinct opii. ʒiss, if no sleep.

11½ P. M. no sleep; more incoherence; pulse rapid, and feeble. A blister was ordered to the nucha, antimonial mixture with tinct. hyosciam. tinct. muriat. morph. á ʒi every two hours for four doses. After two doses, whilst walking about was seized with a convulsive fit which lasted for five minutes; was followed by coma, fixed eyes, commencing stertor; rapid thready pulse; hot pungent skin. He died at 3 A. M. about an hour and a half after the convulsion.

*Inspection* five hours after death. *Head.* The vessels of the membranes were not turgid with blood, but contained many bullæ of air; there were also numerous small bullæ in the cells between the arachnoid and pia mater, this chiefly on the convex surface of the hemispheres. There was a thin veil of serum between the arachnoid membrane and pia mater at the depending part of the hemispheres. On incising the brain, there were more than the usual bloody points on the surface of the incised parts. At the base of the skull there were two ounces of serum; and about two drachms in each lateral ventricle.

*Chest.* The liver forced up by the distended colon, reached the upper part of the fifth rib. The posterior part of the lungs was congested. The heart was healthy.

*Abdomen.* The liver pale externally was tolerably healthy in texture. The stomach contained what had been eaten for dinner partially digested; the mucous coat was much mammillated towards the pyloric end; and towards the cardiac portion, there were small patches of dotted redness, but the texture of the coat was healthy. The end of the ileum and large intestine were laid open. The isolated mucous glands at the end of the ileum were numerous, white and prominent, about the size of a mustard seed, and there were three or four ulcers, the size of a split pea, in course of cicatrization. The follicles in the colon were distinct throughout, but the tunic was sound in texture, and there were no traces of ulceration; towards the end it contained healthy feculence.

The kidneys were healthy.

CASE LXV.—*Delirium tremens; slight serous effusion in the head; traces of former inflammatory action in the mucous coat of the stomach.*

Benjamin ———, Lieut.——Regt N. I., was brought to the European General Hospital, at noon of the 12th September 1841, in a state of delirium tremens; the tremors were excessive; he talked incoherently; the pulse was frequent and soft; the tongue slimy in the centre. He was of full habit of body and the right eyelids were swollen and ecchymosed from a contusion. Three ounces of brandy with water were given and followed by the use of the cold affusion, and then an ounce of camphor mixture with grain ½ of tartar emetic, and ʒiii of tincture of opium was given and repeated after two hours. No sleep; he was constantly rambling and labouring under illusions; there were constant agitated movements of the arms and legs, with occasional rigid spasm; the pulse was rapid and feeble, and the pupils contracted; the tongue coated in the centre and florid at the tip. The head was shaved, cold affusion was again used, a purgative enema was exhibited, a blister was applied to the nucha and calomel grains x were given, then camphor mixture and spirit. ammon. aromat. every second hour. At 9 P. M. it is reported that he had continued troublesome till about 7 o'clock when he fell asleep and continued so with agitated movements of the hands and fingers; the pulse was frequent and small; the skin above the natural temperature; the bowels had not been opened by the enema. He died at 1. A. M. of the 13th.

*Inspection* six hours after death. Body stout.

*Head.* The convex surface of the brain was veiled by a thin layer of serum effused between the arachnoid membrane and pia mater; and there was about half an ounce of serum at the base of the skull.

*Chest.* The lungs did not collapse freely, but were without congestion of blood or serum. The heart healthy, perhaps rather small.

*Abdomen.* The right lobe of the liver was somewhat enlarged and the left rather small; the external surface was rather irregular from buff coloured elevations, and the substance, when incised, was mottled buff. The stomach was empty; the pyloric end of the mucous membrane mammillated, the cardiac end dotted red and the tunic sound in texture. About the middle of the stomach, there were the traces of two cicatrized ulcers. Other viscera not particularly examined.

CASE LXVI.—*Delirium tremens treated with full doses of muriate of morphia; serous effusion in the head; softening of the mucous membrane of the cardiac end of the stomach.*

George Walker, ætat. 38, was admitted into the European General Hospital on the 14th September 1841, with tremulous hands and tongue; no complaint of head; bowels constipated; tongue white. He stated that he had ailed for a week past with want of appetite and occasional vomiting. Some wine and sago were given, a purgative enema exhibited, and some blue pill with a grain of muriate of morphia was given at bed time. His bowels were freely moved by the enema; there was no vomiting during the night and he said that he had slept for some hours; but on the morning of the 15th he was still tremulous, and the tongue was white but not coated. He was ordered sago with two ounces of port wine for breakfast and dinner; a sinapism was applied to the epigastrium, and he was directed to take an effervescing draught with ℥ii of brandy every third hour. At the evening visit he continued tremulous; there was slight heat of skin; the pulse was 112 and feeble. Sago and wine for supper and the pill as on the previous night at bed time. At 9½ P. M. it was reported that since 7 o'clock he had been labouring under illusions and trying to escape from hospital. He was tremulous and agitated, and fancied the presence of objects; the pulse was frequent and of moderate strength; there had been no recurrence of vomiting. An ounce and a half of brandy with water was given, followed by cold affusion, then grains iii. of blue pill, and grains 1½ of muriate of morphia were given, to be repeated every second hour, for three doses, if necessary, and an ounce of brandy with water to be given with each dose. All the medicines were taken, and on the morning of the 16th he continued tremulous, constantly talking, labouring under illusions, fancying objects present, and catching at them with his hands; the pupils were much contracted; the skin was soft; the pulse frequent and feeble; tongue white in the centre; and no recurrence of vomiting. Cold affusion was used to the head and at the same time a hot foot bath; afterwards, a blister to the nucha, and then every second hour camphor mixture with spirit. æther. nitric. and spirit. ammon. aromat. each ℥i. arrowroot with an ounce of wine every third hour. At noon there was no improvement, and tinct. hyosciam. m. xl. were added to each draught. At the evening visit it was reported that the draught had been given five times, and the sago and wine thrice taken. No sleep; agitation, illusions, and contracted pupils continued; pulse 140, better developed. The cold affusion to the head and hot foot bath were repeated; antimonial mixture with tincture of muriate of morphia ℥iii. ordered and

to be repeated with tinct. muriat. morph. 3i. every hour, for three doses. All the doses were given and at 9 P. M. he was quiet and seemed inclined to sleep ; if not asleep at 11 P. M. tinct. muriat. morph. 3i. was directed to be given, and repeated once, after an hour. After the first draught he became quiet. On the morning of the 17th he was very drowsy with contracted pupils and breathing somewhat stertorous ; pulse thready ; skin coldish. He died at 9 A. M.

*Inspection* six hours after death. *Head.* There was a thin veil of serum between the convolutions, under the arachnoid membrane, on the convex surface of the brain. There was about an ounce of serum at the base of the skull. The substance of the brain was very firm and shewed rather more than the usual number of bloody points when sliced.

*Thorax.* Lungs and heart healthy.

*Abdomen.* The liver projected beyond the ribs. On the convex surface, were many bright yellow, but not elevated, patches ; and the organ when incised felt hard under the scalpel, and shewed a surface of mottled yellow.

*Stomach.* The mucous coat of the cardiac end was dotted red, and very friable ; that of the body and pyloric end was mammillated, thickened and somewhat softened. Other viscera not examined.

CASE LXVII.—*Delirium tremens treated with free opiates; moderate turgescence of the vessels of the membranes of the brain; serous effusion considerable.*

William McNeill, ætat. 39, was admitted into the European General Hospital on the 17th September 1841, in a tremulous state, affected with occasional vomiting and diarrhœa, and was reported to have been drinking to excess during the four previous days. He had wine and sago for supper, and effervescing draught with brandy, every second hour. He did not sleep and during the night vomited frequently, and on the morning of the 18th was very tremulous but quite collected; the skin and pulse soft, and the tongue moist. Some brandy and water were given, afterwards the cold affusion was used, followed by the exhibition of 3ii. of tincture of opium to be repeated every second hour for three doses if necessary, and a sinapism was applied to the epigastrium. He slept for two hours, after two doses of the laudanum, but at the evening visit the tremors were unabated and the vomiting continued to recur. The sinapism was re-ap-

plied, brandy and effervescing draughts were given, and at bed time cold affusion was again used, followed by tincture of opium in the same doses as before. He slept for several hours after one dose, but on the following morning (the 19th) the tremors continued, and the vomiting had recurred only once in the course of the night. Sago and port wine for breakfast and dinner. The sinapism was repeated and the effervescing draughts with brandy were given occasionally in the course of the day; the cold affusion was again used at bed time, followed by tincture of opium as on the preceding night. No sleep after two doses of the opiates, and on the morning of the 20th the tremors were still present; the pupils were somewhat contracted and the expression excited; there had been no recurrence of vomiting. Cold affusion was used, followed by tincture of opium 3iii. to be repeated every hour in 3i doses twice, if he did not sleep. At noon he continued troublesome; the skin was moist; the pulse was soft. Brandy and water were given, followed by cold affusion and then mist. antimon. ʒi. c tinct. opii. 3iv. was exhibited, to be repeated after two hours if necessary, with tinct. opii. 3i. Both doses were taken; no sleep was induced, and at the evening visit he was quieter but the tremors continued, and pupils were very contracted; the pulse 80. A blister was applied to the nucha, and the effervescing draughts with brandy were continued every second hour. He slept from 7 to 10 P.M. after which, he again became restless and excited, then comatose and died early on the morning of the 21st.

*Inspection* eight hours after death. The body was stout and there were purple sugillations on the posterior parts of the trunk.

*Head.* There was moderate turgescence of the vessels of the membranes of the convex surface, and there was serum effused at the depressions between the convolutions, beneath the arachnoid membrane. There was about an ounce of serum at the base of the skull.

*Chest.* The lungs and heart were healthy.

*Abdomen.* The intestines, chiefly the colon, were much distended with flatus. The stomach was contracted and the mucous coat of the cardiac end, was spotted dark red, but sound in texture. Liver quite healthy. The right kidney was rather congested.

CASE LXVIII.—*Death by coma. Delirium tremens following free drinking while convalescent from an attack of cholera; membranes of the brain vascular with opaque points here and there in the arachnoid.*

Charles Ellis, ætat. 32, was under treatment for spasmodic cholera in the General Hospital from the 26th to the 29th October 1842, and was

discharged on the latter day well, but weak. After drinking in the bazaar was re-admitted on the 2nd November, again complaining of looseness and pain of abdomen and affected with tremors. He was restless during the day, and at evening the skin was coldish and the pulse feeble. The head was shaved, and a blister was applied to the nucha, and wine and sago were given for supper. On the morning of the 3rd he was comatose and rapidly sinking. He died at 8 A. M.

*Inspection* seven hours after death. *Head.* There was moderate vascularity of the membranes of the brain, and in the arachnoid, opaque points were here and there deposited. There was also slight serous effusion between the arachnoid membrane and the pia mater on the convex surface of the brain.

*Chest.* Both lungs were connected to the costal pleura by old adhesions.

*Abdomen.* The viscera appeared healthy.

CASE LXIX. *Fever simulating delirium tremens and treated as such; pia mater very vascular with bullæ of air in the vessels and between the arachnoid membrane and pia mater.*

William———,ætat. 29, a Conductor in the Ordnance Department, of slight frame, and frequently affected with febrile attacks, in which the head was more or less affected. On the 11th May 1839, he was admitted into the General Hospital, suffering from diarrhœa, for which chalk mixture and calomel with opium were given. On the morning of the 13th (new moon) his skin was hot, he was excited, talked incoherently, and had been walking about the ward a great part of the night; pulse frequent; tongue rather furred in the centre. Cold affusion was used and antimonial mixture with tincture of hyosciamus was directed every two hours. At the evening visit the skin continued hot, and he had not been asleep. The cold affusion was repeated, and calomel gr. iv. tart. antimon. gr. $\frac{1}{4}$. opii. gr. ii. directed to be given at bed time and ol. ricini. $\mathfrak{Z}$iv. the following morning. Towards midnight he became troublesome and excited and the scalp was hot. Cold lotion was applied to the scalp, and a blister to the nucha. About 5 A. M. of the 14th, he became comatose with sinking pulse and laboured respiration. Green coloured dejections were passed in bed. He died at 8 A. M.

*Inspection* five hours after death. Examination of the head was only permitted. The vessels of the pia mater were generally turgid with dark

coloured blood to their minute ramifications, and there were bullœ of air here and there in the vessels, and also between the pia mater and arachnoid membrane. The sinuses were also filled with blood which was coagulated in some of them. There was about half an ounce of serum in the ventricles, and an ounce at the base of the skull. The substance of the brain was natural, and did not present many bloody points.

CASE LXX.—*Remittent fever in a person of very intemperate habits, the symptoms in some respects resembling delirium tremens; death by coma. Three ounces of serum at the base of the skull; mucous coat of the colon softened, with here and there red patches, with a mucous follicle in the centre of each discoloration; and softening of the mucous coat of the stomach.*

Thomas Chittenden, ætat. 34, an Engineer of the Steam Department, of intemperate habits and frequently in hospital, suffering from febrile attacks. He was admitted into the General Hospital on the 30th August 1839, and stated that for eight or nine days he had been affected with febrile symptoms attended with irritability of stomach. On admission he complained much of headache; the bowels were relaxed and the tongue yellow. 36 leeches were applied to the temples and calomel grs. vi. opii. and ipecacuanhæ á gr. i. were given. At the evening visit, it was reported, that he had vomited frequently and been affected with general tremors which continued; the tongue was tremulous and yellow; the abdomen was somewhat full and tender on pressure at the epigastrium and right ribs; there was much headache; the skin was covered with moisture and the pulse was compressible; the bowels had not been opened. A purgative enema was ordered; blisters were directed to the epigastrium and to the nucha, and calomel grs. x. c opii. grs. ii, were given at bed time. The blister acted well and on the morning of the 31st (full moon,) the headache was lessened; the pulse 90; and the tongue not so tremulous. He was ordered saline mixture with tartar emetic solution and tincture of hyosciamus. He slept for two hours during the day and his bowels were freely moved. During the night, there was no sleep; and on the morning of the 1st September, the tongue and hands were tremulous, the countenance flushed, and the pupils dilated; pulse 96. Cold affusion was ordered to the head, and saline mixture with tinct. hyosciamus 3ii. every second hour for three doses. At the evening visit he was still tremulous, his manner was startled, and he muttered to himself; the pulse was feeble and the skin moist; one dark coloured dejection had been

passed. Cold affusion to the head. ℞. mist. camph. ℥iss. mist. antimon. ℥iv. tinct. hyosciam. ℥ii. every second hour till he sleeps; brandy one ounce every hour for three doses, and then every second hour: ℞. calomel gr. viii. opii. gr. i. h. s. The pills were taken; also four ounces of brandy and the draught three times; but he continued agitated; talking incoherently and tearing the dressings from the blister. At midnight there was constant inarticulate muttering; there was general agitation and spasmodic action of the muscles of the face; the pupils were dilated and insensible to light; the skin was hot; the pulse rapid and feeble. Cold affusion was directed to be used to the head every hour whilst the scalp continued hot; and cold lotion to be kept constantly applied; sinapisms were applied to the feet and the other remedies omitted. He became comatose and died at 6 A. M.

*Inspection* nine hours after death. The body stout, and the external surface tinged deeply yellow.

*Head.* The dura mater faintly tinged yellow; the vessels of the membranes were moderately congested. The convolutions on the convex surface of the depending parts of the hemispheres, were veiled with serum effused beneath the arachnoid membrane. There were between two and three ounces of serum at the base of the skull.

*Chest.* The lungs were emphysematous and only partially collapsed. The heart was healthy. The cavity of the chest was encroached on by the liver, which on the right side reached to the 4th rib and coursed obliquely across to the 7th rib on the left side.

*Abdomen.* Omentum loaded with fat. The liver weighed 7½ pounds, was externally mottled chocolate and buff; when incised, of buff yellow colour partly mottled, softened, and admitting of the ready separation of the peritonal coat; the gall bladder contained about an ounce of thin bile. The mucous coat of the cardiac end of the stomach was of dark marbled red colour, somewhat thinned and somewhat softened; the pyloric end pale and mammillated. There was vascularity of the commencement of the mucous coat of the duodenum, but the texture was natural. The large intestine throughout was distended, and there was no thickening of its walls; the mucous coat throughout, was tinged yellow, was thinned, and generally softened; the mucous follicles were generally apparent but not prominent. Throughout the colon there were red patches, here and there, mostly the size of a split pea, some larger; in

the centre of many there was a mucous follicle, and in these places the mucous coat was thin, soft, and pulpy, and after its removal the cellular tissue underneath presented in some instances a vascular patch. The gut was filled with thin yellow feculence. The spleen was of natural size. The kidneys were nearly natural, perhaps commencing yellow degeneration of the cortical substance, evinced by buff streaks.

### *Meningitis chiefly occurring in fever.*

CASE LXXI.—*Remittent fever. Death by convulsion and coma. Vascular congestion of the vessels of the pia mater; rosy tint of the substance of the brain; one ounce of serum at the base of the skull; heart dilated.*

Laurence Fearon, ætat. 37, an Engineer of the Steam Department, and of full habit. During the four months of his residence in Bombay, he had been several times in hospital ill with fever, attended with gastric irritability. He was admitted into hospital on the evening of the 2nd September 1839. having been ill with fever for about a week before admission. There was headache, with pain at the margin of the right false ribs; the bowels were relaxed; thirst great; skin soft, but above the natural temperature; pulse 108, full. He was directed to be bled to ℥xvi. the head to be shaved and cold cloths applied; a warm bath was ordered at bed time, and calomel grs. vi. opii. and ipecac. gr. i. On the morning of the 3rd, there was no headache, and the epigastric uneasiness was removed; the skin was covered with moisture and the bowels had not been moved. An ounce of castor oil was given. At the evening visit the pulse was 96; there was no local pain; the bowels had been moved and the evacuations were bilious. The warm bath was directed at bed time and grains 2 of quinine were ordered, to be taken early the following morning, and to be repeated every second hour for three doses. On the morning of the 4th, general uneasiness of the upper part of the head was complained of; the pulse was upwards of 100; urine scanty. The quinine was directed to be omitted and a draught of rhubarb and magnesia with colchicum wine to be given. At the evening visit the bowels had not been moved; at noon there had been rigors followed by pyrexia; the pulse was 116; the epigastrium was tender; the pupils were slightly dilated; there was some confusion of thought, and slight tremors of the muscles. A purgative enema was exhibited; 30 leeches were applied to the temples, and fifty to the hypochondrium; and a blister was applied between the scapulæ. At midnight he had a convulsive fit, and when seen, about twenty minutes after-

wards, he was found with dilated pupils, breathing heavily and passing into coma; the skin was covered with sweat; the pulse was full; the bowels had not been opened. He was cupped on the temples to ℥x. a purgative enema with ol. Terebinth. ℥iss. was exhibited. Calomel gr. xv. were given and after two hours haust. cathart. ℥iv. were directed to be given. About an hour afterwards, he was again much convulsed; the bowels had not been moved. A foot bath at temp. 110 was ordered, and a blister to the epigastrium. At 2 A. M. he had passed into perfect coma, with stertorous breathing and convulsive movement of the arms and legs; surface hot. He died at 1. P. M. of the 5th.

*Inspection.* Twenty three hours after death. Body stout.

*Head.* There was a general bright red blush of the smaller vascular ramifications of the pia mater. The medullary substance when incised, presented a pale rosy tint, and the cortical substance had also a reddish tint. There was about an ounce of serum at the base of the skull, but none elsewhere.

*Chest.* The lungs were emphysematous on their anterior aspect and old cellular adhesions connected them to the costal pleura; there was very little congestion of their posterior parts. The heart was about twice the size of the fist; all its cavities were dilated, but chiefly the left ventricle, the walls of which were perhaps less than natural in thickness; the muscular tissue of the heart was pale and flabby; there was a fibrinous polypus in the left ventricle, but the cavity was not distended with blood. The lining membrane of the commencement of the aorta had a deep rosy colour (imbibition) and the surface was roughened from firm cartilaginous deposit. The aortic valves and the auriculo-ventricular valves, were undiseased.

*Abdomen.* The stomach was dilated. The transverse diameter of the liver was considerably increased, so that it reached about two inches below the right false ribs, and extended to the left of the mesial line about four inches; it was tied to the diaphragm and sides by old cellular adhesions, was natural in texture but of greenish olive tint. The stomach contained about half a pint of dark green fluid; at the cardiac end, there was a dark red patch and the mucous coat was thinned and pulpy; elsewhere the coat was of natural thickness, of leaden grey colour, and generally somewhat softer that natural. The small intestines healthy in their tissues. At the end of the ileum the isolated glands, were prominent.

The mucous coat of the colon was of leaden grey tint, but of natural texture and the follicles not distinguishable. The spleen was considerably enlarged and softened. The kidneys were, chiefly in their tubular part, considerably congested.

CASE LXXII.—*Fever with typhoid symptoms. Increased vascularity of the membranes of the brain with air in the vessels and beneath the arachnoid; turgescence and ulceration of Peyers glands at the end of the ileum.*

John Steptoe, Private of H. M. 15th Hussars, two months resident in Bombay, was admitted into hospital on the 6th February 1840, and died on the 15th, but had been ill before admission. The following were the leading features of the disease. Pyrexia almost constant with an occasional remission in the middle of the day; hands tremulous; pulse from 100 to 120, compressible; tongue coated and dry in the centre, florid at the tip; sordes about the teeth; thirst; more or less diarrhœa; on one occasion pain between the right ribs and crest of the osilium. The eyes were suffused, at first wandering delirium at nights, and on the latter days drowsiness not amounting to coma.

*Inspection. Head.* There was moderate turgescence of the vessels of the membranes of the brain, with numerous globules of air in the vessels or underneath the arachnoid. On incising the brain, there were more than the usual number of bloody points. There was an ounce of serum at the base of the skull.

*Abdomen.* The liver was quite healthy. The mucous coat of the cardiac end of the stomach, dotted dark red, no softening.

The mucous coat of the end of the ileum was of dark red colour; the patches of Peyers glands were red, turgid, and prominent, and several of them were in different stages of ulceration; close to the ileo-colic valve, there was an ulcerated patch the size of a rupee. There was dark red colour of the mucous coat of the cœcum, but no ulceration. The rest of the large intestine was healthy.

CASE LXXIII.—*Convulsion and coma in a person said to have suffered from repeated paroxysms of fever. The pia mater vascular; the arachnoid opaque and thickened, with here and there patches and granules.*

J. S., ætat. 33. of stout habit, not long resident in Bombay, and latterly occupied in conducting an hotel, was admitted into hospital on the

evening of the 24th September 1840, at 5½ P. M. It was stated that for the five or six previous days he had been affected with fever of the quotidian and tertian type, and had suffered from a paroxysm ushered in with rigors at noon on the day of admission. When seen he had pyrexia with slight wandering; tongue pretty clean; pulse frequent and feeble; abdomen supple. An effervescing draught was ordered every second hour for three or four doses, and 24 leeches were applied to the temples and cold cloths to the head; a foot bath was directed to be used at bed time, and a draught, c. tinct muriat. morphiæ. ʒi. to be exhibited should the headache cease and there be no wandering. Was reported to have had no headache or wandering after the application of the leeches and the skin to have become cool. The draught was given about 10½ P. M.; he was reported to have got up to make water when he fell down convulsed. The head was immediately shaved and a blister was applied to the nucha. He died at 11 P. M.

*Inspection* fifteen hours after death. Body stout and loaded with fat. There were purple sugillations of the depending and posterior parts of the body.

*Head.* The sinuses and veins were turgid with blood, and there was a good deal of capillary vascularity of the pia mater over the entire convex surface of the brain. The arachnoid membrane was thickened and opaque, and in many places, chiefly at the dipping down between the hemispheres, there were patches and granules of lymph between the arachnoid and pia mater. The substance of the brain, when incised, shewed numerous bloody points, but was tolerably firm in texture. There was an ounce of serum at the base of the skull, but not more than the usual quantity in the ventricles.

*Chest.* The lungs were healthy and very little congested. The cavities of the heart were moderately distended with blood. The inner lining of the aorta had a rosy tint, and there was commencing white deposit, in spots and streaks. The muscular parietes of the heart were healthy.

*Abdomen.* The intestines and omentum were loaded with fat. The former distended with air pushed the liver up to the level of the 4th rib. The mucous coat of the stomach had a dusky leaden tint, and was slightly more tender in texture than natural. The kidneys were healthy and there was no distension of the bladder. The spleen was consider-

ably enlarged. The liver was of a greyish tint when incised, but natural in texture.

CASE LXXIV.—*Intermittent fever; some of the paroxysms complicated with convulsive fits, one of which terminated fatally. Thickening and opacity of the arachnoid membrane.*

Richard Parkman, ætat. 28, Seaman H. C. receiving ship Hastings, after having been ill with intermittent fever for two or three days, was admitted into the General Hospital on the 24th March 1842. On that day he experienced a febrile paroxysm attended with headache. An emetic was exhibited and followed by repeated doses of quinine. On the 25th, there was neither fever nor headache. On the evening of the 26th he was seized with a convulsive fit, but denied having been ever subject to such attacks. On the morning of the 27th he was free of fever or headache. Cold affusion to the head with a hot foot bath were used twice, and the only complaint made that day was of a sense of constriction of the throat towards night. On the morning of the 28th, he was free of fever, and quinine was directed to be given; he had a fit in the course of the day and again at night. On the morning of the 29th he was free of complaint and the skin and pulse were good. The liquor arsenicalis was directed to be given thrice, and cold affusion to be used to the head in the event of a recurrence of the fit. Towards evening there was a slight febrile accession, but he slept well, and at the morning visit of the 30th he was reported to have no headache, and to have had no return of the fit. The remedies used on the 29th were directed to be repeated. About half an hour after that report, he was seized with a fit reported to be not more severe than the former ones, and died in about five minutes.

*Inspection. Head.* On the upper surface of the brain, there was a thin veil of serum between the arachnoid and pia mater; the former membrane was opaquish in parts with here and there deposit of distinct yellow points, but in no great number. The substance of the brain was healthy; there were about two ounces of serum at the base of the skull.

*Chest.* The right ventricle of the heart was distended with blood, but the other contents of the chest were in a healthy state.

*Abdomen.* Old adhesions bound the liver to the side. The viscera were otherwise healthy.

CASE LXXV.—*Remittent fever admitted after a week's illness; head symptoms chiefly marked by unsteadiness of manner, and latterly drowsiness. Arachnoid membrane opaque and thickened; increased serous effusion.*

William Subbeter, ætat. 16, after having been ill for a week with headache and fever, was admitted into the General Hospital on the 9th May 1842. There was heat of skin, flushed countenance, undecided manner. The tongue was yellow in the centre and florid at the tip, and the epigastrium was tender. 24 leeches were applied to the temples, and 36 to the epigastrium; the head was shaved, cold applications were used, and sponging of the general surface had recourse to; effervescing draughts were exhibited from time to time, and some blue pill and ipecacuan. were given at bed time. On the morning of the 10th, there was still some heat and dryness of skin, but in other respects the symptoms were improved; and in the evening there was a distinct exacerbation of the febrile symptoms. Sponging, cold applications, and effervescing draughts were continued and the blue pill and ipecacuan. were repeated. On the morning of the 11th still pyrexia; pulse 92; tongue slimy and tremulous; bowels rather relaxed; manner unsteady. The remedies were continued with addition of spirit. æther. nit. to the effervescing draughts, and the application of a blister to the nucha. On the 12th febrile heat and other symptoms continued, accompained with slight subsultus. Camphor mixture c. spirit. æther. nit. was given every third hour; and chicken soup was ordered. On the 13th. pulse 104; four dejections quite feculent; in other respects as on the 12th. Sago and milk morning and evening, and chicken soup for dinner, and the camphor mixture continued. On the morning of the 14th, there was a distinct remission, and quinine and blue pill were ordered every second hour with effervescing draughts. The evening accession was milder. On the 15th and 16th the febrile exacerbation seemed to the somewhat checked under the use of the quinine, but on the 17th the symptoms were all again aggravated; three or four dejections generally in the twenty-four hours. On the 18th he vomited several times and passed three copious watery evacuations followed by sunken features, feeble pulse, and damp skin. These symptoms continued with the addition of drowsiness on the 21st, and death took place on the morning of the 24th.

*Inspection* eight hours after death. *Head.* The arachnoid membrane over the convex surface of the brain, was opaque and thickened with, here

and there, small rounded granules of lymph, the size of a pin's head. There was about an ounce of serum in the lateral ventricles; and about an ounce and a half at the base of the skull. The substance of the brain was firm.

*Chest.* Old adhesions connected the right lung to the pleura, but the substance of the lungs was crepitating. Heart healthy.

*Abdomen.* Liver healthy. Colon distended; mucous coat healthy. The mucous coat of the stomach was of dark grey tint with dark red streaks, but was sound in texture.

CASE LXXVI.—*Cholera; recovery from the stage of collapse; head symptoms; death by coma. Thickening and opacity of the arachnoid.*

William Scott, ætat. 32, Seaman of the barque Ritchie, was taken ill on the morning of the 5th June 1842 with symptoms of cholera, and was admitted into the General Hospital at 6 P. M. The state of collapse was considerable. The occasional purging of conjee-like dejections, but with a gradually improving pulse, continued during the 6th and 7th. He was treated with pills of camphor and blue pill, or Dover's powder and calomel, or Hydrarg. c cret.—On the 8th the gums were reported to be somewhat swollen, the dejections still pale in colour, and at the evening visit a want of alertness of manner was for the first time noted; a full dose of calomel was given. On the 9th defective secretion of urine was noted. During the 10th, 11th, and, 12th the drowsiness increased; the tongue became dry in the centre; there was occasional vomiting and hiccup. The excretions from the bowels scanty. The pulse and skin however were not much affected. No urine was passed, but the catheter was used several times, and at each, a pint or two of urine was drawn off. Blisters were applied to the epigastrium and nucha; ol. Ricini and ol. Terebinth. were exhibited.

On the 13th and 14th the drowsiness increased with muttering delirium, and oppressed breathing, and the pulse lost strength. He died at 5 A. M. of the 15th

*Inspection. Head.* There was vascularity of the pia mater; thickening and general milky appearance of the arachnoid membrane with opaque points here and there. There was about an ounce of slightly turbid serum in the lateral ventricles.

*Chest.* The lungs collapsed, but there was œdema of the posterior parts without hepatization. The heart was healthy.

CASE LXXVII.—*Fever, symptoms typhoid and badly developed, ending in coma. Serous effusion and vascular congestion in the head, also air in the vessels; colon distended and in parts displaced.*

Neil Wallace, ætat. 28, Seaman of the ship Samuel, was admitted into the European General Hospital on the 21st October 1841. He stated that for a fortnight past he had experienced a sense of weight at the centre of the chest for which he had taken much medicine; on admission he inspired freely and there was neither pain of chest nor cough; the skin was dry and above the natural temperature; the pulse was frequent and of moderate strength; and the tongue was florid. It was supposed that he had been living freely for some days. On the 22nd and 23rd the abdomen was full, the pulse from 88 to 92 and feeble, and on the latter day his manner and expression were dull and heavy. He was blistered on the nucha, a full dose of calomel (grs. x.) was given followed by castor oil, and on the morning of the 24th he was somewhat alert; the bowels had been opened twice; the skin was moist; the pulse 92 and feeble. Port wine and sago were given. At the evening visit, the pulse still feeble, but there was febrile heat of skin; the tongue was florid, and the sluggishness of manner had increased. The head was shaved and cold cloths applied, and a nitro-muriatic acid foot bath was used. He continued to lose ground; there was generally a morning remission and evening exacerbation of fever; the pulse became feebler; the hands tremulous and with subsultus tendinum; the tongue became dry; the drowsiness increased, at last passing almost into complete coma. He died on the 31st October.

*Inspection* 14 hours after death. *Head.* A thin veil of serum between the convolutions of the brain on the convex surface; and the small vessels of the pia mater were in parts injected with blood, and the large ramifications contained air. No increased quantity of serum in the ventricles or at the base of the skull.

*Chest.* The lungs inflated did not collapse; heart healthy.

*Abdomen.* The liver was healthy. The colon was much distended with gas, and the sigmoid flexure, thrown across the small intestines, was applied to the inner aspect of the ascending colon; the large intestine was sound in texture.

CASE LXXVIII.—*Remittent fever; no coma. Serum underneath the arachnoid and at the base of the cranium; the liver much enlarged; dark rosy tint of the mucous coat of the stomach.*

John Martin, ætat. 58, Cook of the ship Herefordshire, was admitted into Hospital on the 31st of October 1840. He stated that for two days he had suffered from vomiting, purging, headache and sense of oppression at the lower part of the sternum, which complaints he attributed to exposure to the sun whilst the ship was undergoing repairs in dock. On admission, the face was flushed; there was anxiety and oppression; pulse 120, jerking, and easily compressed; abdomen full; tongue dryish and florid; skin hot and dry. He was freely leeched on the epigastrium and blistered, was cupped on the nucha and subsequently blistered. He took two or three ten-grain-doses of calomel and one of a scruple. The symptoms altered little. There was much restlessness and moaning; oppressed breathing; frequent vomiting; dejections of dirty light grey colour and watery; tongue dry and florid; pulse frequent and compressible; skin dry and generally above the natural temperature; abdomen full. He continued quite sensible and died in the forenoon of the 2nd November.

*Inspection* five hours after death. *Head.* There was a thin veil of serum under the arachnoid membrane on the convex surface of the brain, and an ounce of serum at the base of the skull. On incising the substance of the brain, there were more than the usual number of bloody points observable.

*Chest.* There were old adhesions of the right lung. The lungs were moderately collapsed and there was no congestion of the posterior parts. The cavities of the right side of the heart were full of blood; and there was commencing disease of the aortic valves and beginning of the aorta.

*Abdomen.* The omentum was loaded with fat, the intestines, both great and small, were collapsed. The liver enlarged reached to the crest of the os ilium and to the umbilicus; it was of pale yellow colour and when incised did not give out much blood. The gall bladder was rather flaccid. The spleen was soft and pulpy. The mucous coat of the stomach had a dark rosy tint, general throughout, with dark brown patches, but the texture was not softened. The kidneys were somewhat lobulated and rather small, but there was no well marked disease of their structure.

## *Abscess in the brain and tumour with softening.*

CASE LXXIX.—*Abscess in the left hemisphere of the brain; for some time general febrile symptoms; hemiplegia of the right side some days before death.*

Jeremiah Merit, an African, ætat. 24, after a month's illness was admitted into the European General Hospital, on the 2nd September 1842. He suffered under a mild attack of dysentery and was discharged well on the 9th October. Re-admitted on the 19th October, ill with quotidian fever, associated with pain of the left hypochondrium, and he was discharged well on the 1st November. Re-admitted on the 24th November, he suffered under irregular febrile accessions, but to no great extent; he made no complaint of local uneasiness, and the suspicion was entertained that he was disposed to make more of his ailments than their apparent importance justified. On the 20th December, his bowels were relaxed and he complained of cramps of the limbs. On the 21st the right arm and leg were weak. On the 22nd there was complete hemiplegia of that side with occasional twitching of the arm. There was heat of skin, and he was manifestly losing flesh and strength; no headache complained of. He continued in this state with generally a febrile accession towards evening. He died on the 28th.

*Inspection* seven hours after death.

*Head.* There was considerable thickening with an opaque state of the arachnoid membrane of the upper surface of the brain with yellow points here and there. In the left hemisphere of the brain above the lateral ventricle, there was an abscess, the size of a large walnut, filled with pus and surrounded with a pulpy state of the cerebral substance. The right side of the brain was healthy.

*Chest.* Old adhesions of the lungs and pearly deposit on the surface of the heart.

CASE LXXX.—*Amaurosis of both eyes; headache; fatuity; convulsions; tumour in the brain with much softening of the cerebral substance.*

Joshua Paterson, ætat. 25, Seaman of the ship Don Pascoa, was admitted into the European General Hospital on the 25th April 1841, affected with complete amaurosis of both eyes and complaining of pain of the right side of the head, fixed at the temple and shooting in different

directions. He was somewhat reduced in flesh and strength; he stated that about fifteen months before, he became affected with headache, and had continued subject to it ever since; about seven months before admission, the pain was confined to the left temple and was followed by amaurosis of the left eye; whilst at sea about two months since, the pain affected the right side of the head, and the amaurosis of the right eye took place about a fortnight before admission. He continued in hospital till the 2nd December 1842, (a period of 19 months) when he died. During the first month or two, there was more or less pain of head. Leeches, blisters, &c. were used. During the greater part of his residence in hospital, he was in a fatuous state, and made little complaint. On too occasions he experienced convulsive fits followed by sopor, and twice extensive sloughing ulcers formed on the sacrum. Some days before his death, he lay in a drowsy state with twitching movements of the fingers, and refused all food.

*Inspection* eight hours after death.

*Head.* The lower part of the anterior lobes and the anterior part of the middle lobes of the brain adhered to the calvarium and were separated from it with difficulty. The brain in these sites, but chiefly the anterior part of the middle lobe of the left side, was in a very pulpy state; in the latter site there was imbedded a tumour, the size of a small walnut, partly schirrous and partly tubercular in its character. The rest of the brain nearly natural.

## Thoracic Diseases.

### *Phthisis Pulmonalis.*

Case lxxxi.—*Phthisis pulmonalis; lungs tuberculated, hydatid sac in the abdomen, also in the liver; peritoneum studded with miliary transparent tubercles.*

Edward Collingridge, H. M. 15th Hussars, ætat. 22, had been troubled with a pectoral affection, during the voyage, and was admitted into hospital on the 10th November 1839. He was pale, sallow, and had frequent dry cough. Tubercular deposition in the lungs, was suspected, though the physical signs did not make it quite clear. On the 3rd December the abdomen was tense and full, with sense of fluctuation. There was constant hectic fever with increasing emaciation, and he died on the 2nd January.

*Inspection* twelve hours after death, body much emaciated.

*Head.* There was a thin veil of serum between the arachnoid and pia mater on the convex surface of the brain. The substance of the brain was soft.

*Chest.* There was a pint of serum in the sac of each pleura. The anterior part of the lungs was emphysematous and miliary tubercles were disseminated throughout. The posterior part of the upper lobe, and almost the whole of the lower lobe of the right lung was impermeable from tubercular infiltration; in places, there were tubercular masses the size of a pigeon's egg, but generally it was intermixed with the red parenchyma and presented the variegated appearance (when incised) of shell marbles, in which red and white are the predominating colours. The posterior part of the left lung was œdematous, but there was little tubercular infiltration. The heart was healthy.

*Abdomen.* The intestines were displaced, and the centre part of the abdominal cavity was occupied by a hydatid sac which completely filled the pelvis, rose over the promontory of the sacrum, and reached to the margin of the left lobe of the liver. This sac was filled with many pints of hydatids, transparent and clear, ranging from a marble in size, to a large orange; there was also a great quantity of yellow membranous shreds, the evident teguments of dead hydatids. In the left lobe of the liver were two sacs, each the size of a small orange, also filled with hydatids. The intestines were of a dark leaden colour, and generally contracted. The mesentery and much of the peritoneal surface of the intestines, and also the omentum, were studded closely with miliary tubercles, about the size of a mustard seed; and to these the small red ramifications of vessels very frequently extended. The stomach was small. The kidneys healthy. The examination was not further pursued.

CASE LXXXII.—*Incipient phthisis; death by dysenteric symptoms; miliary and crude tubercles in the lungs; large intestines ulcerated.*

John Parks, ætat. 38, an Engineer of the Steam Department of slight habit, had served in North America, and been exposed to vicissitudes of climate, and been subject to catarrhal affections. Arrived in Bombay a few months before his admission into hospital, on the 1st April 1839. He was supposed then to labour under catarrh; he was improved by the

treatment and returned to his duty on the 14th April. He was re-admitted into hospital, on the 6th May complaining of an increase of cough attended with scanty and frothy expectoration. There was no pain of chest and no excitement of pulse. Blisters were repeatedly applied to the chest, antimonials, squills, muriate of morphia with ipecacuan. and extract of conium were given, with occasional, but temporary alleviation of the symptoms. On the 4th June, the duller sound on percussion below the right clavicle, the obscure respiratory murmur under both clavicles, and the occasional subcrepitous ronchus led to the suspicion that tubercles were in process of deposition, and that the disease had advanced most on the right side. He continued harassed by the cough, to which occasional dyspnœa was superadded, till the 21st June, when dysenteric symptoms first shewed themselves and progressed without check. There was distressing tenesmus, frequent dysuria and tenderness of abdomen. He was freely leeched and blistered; opiate enemata, and suppositories, were used, and latterly opium in two grain doses every three hours was given for several days, with relief to the suffering, but without inducing symptoms of narcotism. He died on the 11th July.

*Inspection* eleven hours after death.

*Chest.* At the posterior part on both sides there were extensive adhesions of the costal and pulmonary pleura; several portions of the right lung were tuberculated, and this was chiefly the case in the upper lobe. There were a few miliary tubercles in the left lung.

*Abdomen.* The liver was of pale colour, and in the right lobe there were two small abscesses. In the transverse colon there was extensive ulceration, and the mucous follicles in the other portions of the colon, were in different degrees of developement or ulceration.

CASE LXXXIII.—*Incipient phthisis; miliary tubercles few; death from diarrhœa. Thickening with dark red discoloration of the mucous coat of the end of the ileum, and of the large intestines; redness, in places, spotted and in the centre of each spot there was a mucous follicle.*

Richard Peers, of sallow and emaciated habit, ætat. 29, Seaman of the ship Surry, had led a sea life for nine years, had never been in India before his present voyage; had been employed in the English coasting trade and enjoyed good health. He was admitted into the General Hospital on the 17th May 1839; he stated that for six weeks, he had suffered from uneasiness of chest, inability to inspire freely, occasional hard cough,

with scanty expectoration, occasional febrile accessions and night sweats. The pulse was feeble and the tongue was clean; the cough was generally excited by decubitus on the back. He continued till the 26th suffering more or less from cough, and scanty expectoration, occasional febrile exacerbations and night sweats, and losing flesh and strength. On the 31st May, the physical signs were, no dulness on percussion below the clavicles; on the left side the respiratory murmur under the clavicle was good, and there was no resonance of the voice; on the right side the respiratory murmur was blowing below the clavicle, and there was distinct resonance of the voice both below the clavicle and above the spine of the scapula. The stethoscopic examination annoyed him and was not repeated.

Throughout this period the treatment consisted in repeated blistering, occasional leeching; the use of antimonials, or of pills of extract of conium ipecacuan. digitalis, and muriate of morphia; occasionally a pill of calomel and opium was given and followed by castor oil. On the 26th June there was frequent purging, the abdomen was distended and tender; the skin was above the natural temperature; the pulse 100 and firm, and the tongue florid at the tip and edges. Ten ounces of blood were taken from the arm, four dozen of leeches were applied to the abdomen, and repeated on the same day, and again on the 27th, followed by a large blister; calomel, opium, and ipecacuanha, were given and continued, and mercurial inunction was also used. On the 29th the distension and tenderness of abdomen had ceased, but the purging continued unabated; there was no constitutional effect from the mercury; the cough had ceased to be complained of. The treatment from this date consisted chiefly in the exhibition of anodyne enemata with acetate of lead; pills of quinine hydrarg. c. cret. and opium. The purging continued unchecked and attended with troublesome hiccup. He died on the 9th July.

*Inspection* five hours after death. Body much emaciated. Abdomen collapsed.

*Head.* Brain exsanguine; there were about three ounces of serum in the cavity of the head, chiefly at the base of the skull.

*Chest.* Firm old adhesions united the anterior aspect of the upper lobes of both lungs to the parietes of the chest. There was emphysema of the edges of the lobes, and also of part of the body of the lobes; there were a few miliary tubercles here and there, so few however, as not to lead to condensation of any part of the lung. The lower lobe of the left lung was firm, not hepatized, but much gorged with frothy serum. The heart was healthy.

*Abdomen.* The liver was of dark olive brown colour externally, and presented the same colour when incised; the texture was firm. The stomach was healthy. Of the mucous coat of the end of the ileum there was dark red discoloration arranged in streaks and attended with thickening of the tunic. Throughout the large intestines the mucous coat was thickened, firm and more closely adherent to the submucous tissue, much of its free surface was irregular and warty but not ulcerated; throughout, it was discoloured, dark red, dark brown, or olive green; in places this discoloration assumed a spotted character, the spots close set and in the centre of each there was a mucous follicle. The mesenteric glands were not enlarged, and there were no traces of peritonitic inflammation.

CASE LXXXIV.—*Phthisis pulmonalis; lungs tubercular. The liver pale and much enlarged.*

William Potter, artificer of the Gun Carriage Department, ætat. 24, a man of dissipated habits and slight frame, an Indo-Briton. In the early part of 1839, he began to suffer from a pectoral affection and to lose flesh. He was admitted into hospital on the 15th April 1830; at that time he was suffering from confirmed phthisis; he remained in hospital till the 30th June and then returned to his duty. He was re-admitted into hospital on the 15th October. The symptoms had became aggravated. He died on the 31st March.

*Inspection.* Body much emaciated. The chest narrow; there were old adhesions of the pulmonary and costal pleura. The anterior part of the lungs was emphysematous; the posterior parts were infiltrated with tubercular matter. The liver was of pale colour and much enlarged, it occupied both hypochondria and the epigastrium, and reached in a vertical direction four inches below the ensiform cartilage to the level of the 9th rib; its texture was pale and hard.

CASE LXXXV.—*Pertussis; lungs tubercular; hypertrophy of the left ventricle of the heart in a child, reported to have been subject to asthma.*

Henry Wallace, ætat. 7, a feeble boy, reported to have been subject to occasional attacks of asthma, was admitted into hospital, ill with pertussis on the 23rd May 1840, and died on the 26th.

*Inspection. Chest.* Both lungs were pale and emphysematous, and completely occupied the chest. The right one presented, here and there, in all the lobes the commencement of tubercular deposition, either in the

form of occasional grey miliary tubercles, or grey tubercular infiltration. A small quantity of frothy mucus exuded from the cut ends of the bronchial tubes. The left lung was white and dry with very little tubercular deposit. There was little vascularity of the bronchial lining, but at the bifurcation of the bronchi, there was a calcareous concretion, the size of an almond. The left ventricle of the heart was somewhat hypertrophied.

*Abdomen.* The liver filled the epigastrium and projected beyond the ribs. The mesenteric glands ranged from a horse bean to an almond, in size, and some of them were cretaceous.

CASE LXXXVI.—*Phthisis pulmonalis; the right lung studded with miliary tubercles which were also apparent underneath the costal pleura; the mucous coat of the large intestines and the end of the ileum ulcerated.*

John Johnstone, ætat. 52, a Seaman of broken constitution, was admitted into hospital, on the 9th October 1840. He had been ill for a fortnight with acute pain about the right false ribs, attended with short troublesome cough, diarrhœa, and night sweats; there was a good deal of subcrepitous rale about the right side of the chest, and on the left side the respiration was puerile. During his residence in hospital the pain of the side ceased; there was frequent cough generally, with scanty, glairy expectoration; a sense of tightness across the chest, and no fulness about the right hypochondrium. There were occasional febrile accessions, but no recurrence of diarrhœa till the 10th November. After which he sunk rapidly and died on the 21st. Tongue generally clean and moist.

*Inspection* twelve hours after death. Body emaciated.

*Chest.* The left lung was fully collapsed. The right one adhered firmly to the costal pleura and was closely studded with miliary tubercles, many of which had commenced to soften; in the upper lobe there was a cavity as large as an almond; the lowest lobe adhered firmly to the diaphragm. On separating the adhesions, parts of the costal pleura were seen, with small miliary tubercles, the size of mustard seeds, transparent, standing in slight relief from the surface, and plainly situated underneath the pleura. In the left lung there were some miliary tubercles, but few, some of them immediately underneath the pleura and standing in slight relief from the surface, covered by the pleura, transparent and unaltered. Heart healthy.

*Abdomen.* Liver quite healthy without adhesions any where. The intestines had a dark leaden tint. The mucous coat of the ileum was of a

dark red colour, with many round ulcers. The mucous coat of the large intestines was of a dark grey tint, in places almost black; the surface generally irregular, from the mucous coat being fixed in a rugous state; there were numerous ulcers some of them cicatrizing. Kidneys healthy.

CASE LXXXVII.—*Phthisis pulmonalis; both lungs much tuberculated. In the lower lobe of the left lung there were transparent and miliary tubercles, immediately underneath the pleura, and apparently in the sub-serous tissue.*

Samuel Milligan, ætat. 21, a Seaman with fair hair, and of strumous habit, was reported to have been attacked with bronchitis in July 1840. After having suffered during the two or three months before, from iritis and a papular eruption. For the bronchitic attack he was brought under the influence of mercury, but the cough and dyspnœa were never completely removed. He was admitted into hospital, on the 28th September 1840. There was then no doubt, that he was labouring under phthisis. The disease became more fully developed; the expectoration puriform, attended with hectic fever, apthous tongue, and diarrhœa. He died on the 25th November.

*Inspection* ten hours after death. Body much emaciated.

*Head.* There was more than the usual quantity of serum in the ventricles and at the base of the skull.

*Chest.* Both lungs were connected by firm adhesions to the costal pleura. The whole of the right lung was studded with closely set crude yellow tubercles. The size of a pea or larger, many of them coalescing, none softening. In the upper lobe of the left lung the disease had advanced further, and there were irregular and considerable cavities; there were miliary tubercles in the lower lobe and several of them were very small, not nearly so large as a mustard seed, transparent, immediately under the pleura, and moving with it when the surface was rubbed. The heart healthy.

*Abdomen.* The liver was of dark red colour but natural in texture. Stomach healthy. The large intestine was contracted; its mucous surface rugous; there were many small circular ulcers, but no thickening of the mucous coat. The inner surface of the cœcum was of dotted red colour without ulceration. At the end of the ileum the mucous glands were numerous and distinct, and parts of the surface reddened, but no ulceration. The mesenteric glands were generally enlarged; the largest, about the size of a horse bean, but none of them were tubercular. The kidneys were healthy.

CASE LXXXVIII.—*Phthisis pulmonalis. The tubercular deposition further advanced in the left lung.*

Charles, ætat. 38, a fair haired, but moderately stout, Swede, a Seaman of the Inglis, had been ill with a pectoral affection for five weeks, before admission into hospital, on the 10 May 1840. Respiration hurried, on admission; cough frequent; expectoration white and frothy, then becoming copious and puriform. On the 2nd June, the physical signs are no dulness on percussion on either side; throughout the right side the murmur is distinct, somewhat louder than natural and unmixed. On the left, from the clavicle to the nipple and posteriorly at the scapula, there is low subcrepitous rale, and lower down the respiration is somewhat blowing. He was discharged relieved on the 16th July. Re-admitted on the 28th, and died on the 25th August.

*Inspection.* The left lung adhered throughout firmly to the pleura, was much indurated, and studded with miliary tubercles which were in progress of softening; in the upper lobe there was a cavity two inches long. The right lung also tuberculated in a less degree.

CASE LXXXIX.—*Phthisis pulmonalis. Both lungs much tuberculated. The optic nerves both obliterated after blindness of eleven years, duration.*

William Wroughton, ætat. 25, an Indo-Briton, *blind.* Born in India and brought up at the Byculla Schools. Admitted into hospital on the 5th November 1839, emaciated, with feeble pulse, and stating that for two months he had had a pulmonic affection with frequent cough and copious yellow sputa. Physical signs, below the right clavicle there is dulness on percussion, not so on the left. Pectoriloquy under the right clavicle with cavernous respiration; elsewhere anteriorly on that side, the respiration is bronchial. On the left side under the clavicle, loud pectoriloquy, cavernous respiration, and occasional subcrepitous rale. No diarrhœa. He died on the 15th.

*Inspection* eighteen hours after death. The brain was generally soft in texture. The optic nerves were wanting; there was the pearly coloured neurilemma passing into the orbits, rising from the membranes and having no connection with the cerebral substance. From the softened state of the brain the parts became lacerated, but I think, that the tractus optici as they pass round the crura-cerebri were also wanting. The eyes sunken in the orbit, and the corneæ opaque and pearly.

*Chest.* The lungs did not collapse partly from emphysema, partly from their being solidified. Right side. The upper lobe adhered to the costal parietes, and with the exception of the thin edge was completely impermeable from uniform tubercular infiltration ; at the upper and back part of that lobe, there was an empty excavation, the size of a hen's egg, and another the size of a walnut ; the posterior part of the second lobe was also much solidified from tubercular infiltration. The mucous lining of the bronchi was dark red and there were about eight ounces of serum in the sac of that pleura. The upper lobe of the left lung adhered, but not closely to the walls of the chest, and throughout, tubercular matter was infiltrated in nodules ; the second lobe was most solidified and that chiefly at its posterior part ; at the upper part of the second lobe there was a cavity the size of a walnut.

*Abdomen.* Stomach and kidneys, healthy ; the viscera not otherwise particularly examined.

*Remarks.* There is accurate information relative to the blindness of this boy. He was admitted into the Byculla School, with his sight perfect in 1825, lost one eye in 1826, and the other in 1828.

CASE XC. — *Phthisis pulmonalis ; the disease furthest advanced in the right lung.*

Thomas Brett, ætat. 20 a Servant, of fair complexion, had been complaining ever since he left England, some months before, he was admitted into hospital on the 21st October 1839. Respiration oppressed ; cough frequent. The disease ran a rapid course with copious puriform expectoration and frequent febrile accessions and night sweats. He died on the 18th December.

*Inspection.* The right lung in part hepatized, with pleuritic adhesions, tubercular deposition, and a cavity in the upper lobe. The left-lung also contained a cavity, but it was less indurated in its substance.

CASE XCI.—*Phthisis pulmonalis in a pensioned Serjeant of intemperate habits.*

James, ——— ætat. 48, Serjeant of the Pension list, and Crier in the Supreme Court, was admitted into hospital on the 16th July 1839, broken and emaciated. Some months before, he had been under treatment for hœmoptysis and delirium tremens, and he stated that after that illness, he was much troubled with cough, and expectoration of yellow sputa.

*Physical signs.* Is emaciated. There is considerable depression under the right clavicle, and the sound, on percussion there, is somewhat duller but very little so, than on the other side ; under that clavicle there is cavernous respiration and pectoriloquy, the latter much more distinct above the spine of the scapula ; elsewhere anteriorly on that side of the chest, there is puerile respiration, but no rales. Under the left clavicle there is also cavernous respiration, but pectoriloquy is suspected, it is not very distinct; puerile respiration, also, elsewhere on that side, and no rales. The cough continued troublesome, sputa copious and puriform. He died on the 29th July. The friends objected to the body being opened.

CASE. XCII—*Extensive ulcer on the groin ; miliary turbercles in the lungs, and underneath the peritoneum throughout its whole extent. Follicular ulceration of the large intestines. Three ounces of serum in the cavity of the cranium; no head symptoms.*

Charles Sutherland, ætat. 24, a Seaman of fair complexion and strumous habit, was first admitted into the hospital on the 16th October 1838. affected with an extensive ulceration of the left groin, and of the under and upper part of the thigh of the same side. This affection was of several months duration and was attributed to a venereal sore, with which he had been affected some time previously. He remained in hospital without improvement till the 17th January, when being impatient from the tedious nature of his illness, and at the want of success attending the treatment, he was discharged at his own desire. He was re-admitted on the 17th February, having been during his absence from hospital, under the care of a Hakeem in the bazaar, who had used various applications and given internal remedies, in consequence of which the mouth had become affected. At this second admission the ulcer on the groin had a more unhealthy appearance, its edges being ragged and irregular ; that on the thigh had become double its former size and had also irregular ragged edges.

Sarsaparilla and Hydriodate of Potass were prescribed and continued for sometime, and the applications to the ulcers were frequently changed and varied. The ulcers did not at all improve in appearance, and the general health declined, and on the 9th April he first complained of cough with scanty expectoration. The cough continued more or less troublesome, most troublesome, during the three weeks, immediately succeeding its first appearance, than at any subsequent period. The ulcers were generally stationary, sometimes, however, for a few days assuming a more healthy appearance, and then again relapsing. The strength declined; night sweats

became troublesome, the cough ceased; and on the 19th June, diarrhœa commenced, and was more or less urgent and attended with florid tongue, till the period of death on the 15th July.

*Inspection* six hours after death; body emaciated; abdomen collapsed.

*Head.* There was no turgescence of the vessels and there were about three ounces of serum at the base of the skull.

*Chest.* There were adhesions of the upper lobe of the right lung to the anterior parietes, and opposed to these adhesions there was a crude tuberculous nodule the size of a walnut; the lowest lobe of the right lung was moderately congested with frothy serum. The upper lobe of the left lung was healthy; the lowest part of the lower lobe was in a state of red hepatization, and at the upper part, and immediately below the pleura there were miliary tubercles deposited. The heart was healthy.

*Abdomen.* There were about five ounces of clear serum in the cavity of the pelvis. Over the peritoneal lining of the lateral part of the abdomen, of the pelvis, and of much of the intestines, there was a blush of ramified redness and the tunic was studded, in these places, with isolated miliary tubercles, transparent, none larger than a pin's head and many smaller; in many instances, they seemed to constitute the termination of a vascular ramification. Underneath the peritoneal lining of the diaphragm where opposed to the liver, there was a similar tubercular deposition, but here, instead of standing in relief, it was compressed into flattened patches—a modification evidently caused by the resistance of the liver, because, on the left side of the diaphragm, where there was no resisting object, the tubercles stood out in relief as elsewhere. These appearances were much more developed on the right, than on the left side of the abdomen. The mucous coat of the stomach was dotted dark red at the cardiac end, but it was healthy in texture; towards the pylorus, it was mammillated and thickened. The liver was pale and mottled. The mucous coat at the end of the ileum was vascular and studded with mucous glands. The mucous coat of the colon and rectum was studded with ulcerated follicles, and in some, cicatrization had commenced; here and there, there were patches of reddish lymph with occasionally a yellow central point like a tubercle. The mesenteric glands ranged in size from a pea to a horse bean, but they were not tuberculated. The kidneys were healthy.

CASE. XCIII.—*Phthisis pulmonalis in an African affected with, and sometime suffering from tubercular elephantiasis.*

Richard Slade, an African, had been in hospital, ill with tubercular

elephantiasis was discharged, relieved ; re-admitted after a month in the last stage of pulmonic disease.

*Inspection.* The lungs quite impermeable, in great measure from tubercular deposition. There were cavities here and there.

CASE XCIV.—*Phthisis pulmonalis in a Seaman, also affected with scurvy; the disease farthest advanced on the right side.*

James Rowland, ætat. 34 a Seaman of the ship Java, was admitted into hospital on the 28th October 1840. The following is the report on admission. " Has been a long time on the voyage from England, and arrived yesterday. There were discoloured and livid patches on the legs; gums scorbutic. Suffered from a pulmonic affection for four months, at one time attended with copious puriform expectoration. At present he is sallow and emaciated ; respiration laboured; pulse 108, feeble; skin above the natural temperature. He has acute pain which shoots from the cardiac region to the posterior part of the left hypochondrium ; abdomen rather full and somewhat tense; bowels reported to be opened three or four times daily; tongue moist and clean. *Physical Signs.* The anterior part of the right chest is markedly flattened; and is dull on percussion throughout, under the clavicle. The respiration is cavernous, and pectoriloquy is distinct and shrill. Elsewhere anteriorly, there is an occasional bronchial sound, but no healthy murmur. On the left side the murmur is high, and puerile.

He was treated with tonics, anodynes, and nourishing diet. He lingered till 2nd December when he died. Latterly there was diarrhœa.

*Inspection* 14 hours after death. Body emaciated.

*Head.* An ounce of serum at the base of the skull, otherwise healthy.

*Chest.* The right lung adhered very firmly to the costal pleura and was throughout quite condensed by tubercular infiltration. The left adhered by bands of adhesion, was spongy, but with numerous miliary tubercles throughout the upper lobe; also many immediately beneath the pleura of the lung. Heart, rather enlarged.

*Abdomen.* Stomach and intestines distended with air; not further examined.

## *Pleuritis.*

CASE XCV.—*Irregular febrile symptoms with diarrhœa; mental depression. The arachnoid thickened and of milky colour. Empyema of the right pleura, not suspected during life: mucous coat of the colon of grey colour with round ulcers here and there.*

Charles Wilson ætat. 40, had been an Engineer in the Steam Depart-

ment and was of dissipated habits. He had been affected with dysenteric symptoms for which he was bled and leeched and took remedies some days before his admission into hospital, on the 14th December 1839. The symptoms during his residence in hospital, were diarrhœa with a tongue coated in the centre, and frequently florid at the tip; frequent febrile exacerbations, and great depression of spirits. No cough or pectoral symptoms noted in any of the reports. He died on the 14th January.

*Inspection.* The arachnoid membrane was thickened and of milky colour. The right lung was compressed and there were about three pints of purulent matter in that sac of the pleura; and the pleura was coated with a layer of lymph. The liver was enlarged, pale, mottled. The mucous coat of the stomach mammillated. The small intestines were healthy. The mucous coat of the cæcum and colon of dark leaden grey colour, with here and there round ulcers.

CASE XCVI.—*Admitted after twelve days illness with febrile symptoms; death after three days and a half residence in hospital. Ten ounces of turbid serum in the right sac of the pleura. Lungs œdematous.*

James Stephens, Seaman H. C. R. Ship Hastings, was admitted into the European General Hospital on the evening of the 20th September 1841. It was stated that he had suffered for twelve days previously from febrile symptoms, with pain at the epigastrium and had passed several tape worms. On admission, his breathing was quick and oppressed; the countenance was anxious; the skin damp; the pulse feeble, quick and irregular. There was strong action at the cardiac region, the impulse of the heart very forcible, and the sound not to be distinctly marked. He made no complaint of pain, but of vertigo on assuming the erect position. On the 21st the breathing was less oppressed and the strong action of the heart had decreased; the respiratory murmur was heard unmixed on both sides anteriorly; the posterior part of the chest was not examined. The pulse was 112 and feeble; the tongue dry in the centre; the urine scanty, and the bowels slow and his general manner was confused. A turpentine enema was used, a sinapism was applied to the cardiac region, the head was shaved, and a blister applied to the nucha, and some diuretic medicine was given. On the morning of the 22nd there was very little change. Effervescing draughts were used, and wine in small quantities with sago was given from time to time. Towards evening there was less oppression of breathing, and at that time the respiration on the left side anteri-

orly was puerile; on the right side blowing, with occasional crepitus and sonorous ronchus, and at the lateral part of the chest and about the right nipple, the respiratory murmur was faint and short. The posterior part of the chest was not examined. He continued to lose ground. On the 23rd was troubled with cough. He died on the morning of the 24th.

*Inspection* eight hours after death. Body stout, purple sugillations on the posterior part of the trunk.

*Head.* Brain healthy.

*Chest.* In the right sac there were about ten ounces of turbid brown fluid, but no effusion of lymph on the surfaces of the pleura. There was a good deal of œdema of the posterior part of the lowest lobe, but no hepatization of any part of the lung. The left lung adhered firmly by old adhesions, but was crepitating and healthy in its texture. The heart and aorta were perfectly healthy. The liver was healthy. The intestines distended with flatus. The stomach small. The spleen healthy. In both kidneys there was commencing yellow striated deposit in the cortical substance.

CASE XCVII.—*Pleuritis; seven pints of serum in the right chest with large coagula of blood.*

Thomas Morris, ætat. 25, a Seaman of H. M.'s Ship Volage. Had led a sea life for twelve years, had been chiefly employed in the North American merchant service, and had not suffered from pectoral affections. Was admitted into the European General Hospital on the 24th March 1839. In the statement of his illness which accompanied him, it was noted that he had been taken ill on the 5th March with severe cough, dyspnœa, and pain of chest. He had been bled, blistered, taken purgatives, and subsequently squill mixture.

On admission into hospital the pulse was feeble; the countenance sallow; he complained chiefly of debility and occasional dry cough. He stated that his illness began with pain in the line of the sternum, attended with cough, and frothy expectoration. The following were the physical signs recorded. "The level of the right nipple is somewhat below that of the left, but there is no other cognizable difference in the appearance of the two sides All over the right side of the chest, anteriorly, laterally, and posteriorly, the sound is dull on percussion, and the respiratory murmur is inaudible. On the left side, the sound is clear on percussion, and the respiration is puerile." He was ordered squills with antimonial mixture and tincture of hyosciamus. On the 26th a blister was applied to the right side of the chest, and on the 27th he commenced to take at bed

time, calomel pulv. scillæ. á gr. ii. ipecac. gr. ss. opii. gr. $\frac{1}{4}$ and acid sulph. dilut. m. xv. twice in the course of the day. Continued till the 2nd of April, annoyed with dry cough, the pulse being frequent and feeble, and night sweats present. On the 2nd April he complained of pain at the epigastrium, for which he was leeched with partial relief, and on the 3rd it is noted that "from the margin of the right ribs in the epigastrium and to the umbilicus, the sound is dull on percussion; there is no tumefaction, but more resistance than on the other side. The respiration is oppressed." He continued with little change and unrelieved by the repetition of the leeches till the 9th, when it is noted "that he had passed a restless night from dyspnœa and short dry cough; decubitus is easiest on the right side; respiration at present laboured; murmur almost inaudible on the right side and puerile on the left; there is still uneasiness at the epigastrium and at the edge of the right ribs, with resistance and dull sound on percussion; pulse almost imperceptible." He died at midnight.

*Inspection* six hours after death. Body not emaciated.

*Head.* There were about two ounces of serum in the cavity of the head.

*Chest.* There were seven pints of fluid in the sac of the right pleura; at the upper part, it was clear serum, and towards the spine, coloured with blood of which there were coagula of considerable size loosely adherent to the false membrane which lined the pleura. The pleura pulmonalis and costalis were coated with a layer of lymph which peeled readily off; the right lung was quite condensed and compressed against the spine. There were old adhesions of the left lung and a good deal of frothy serous infiltration of its substance. The heart was natural.

*Abdomen.* The liver was pressed down and almost reached the crest of the os ilium, and the diaphragm above the liver was quite flat, it had lost its arched form. The abdominal viscera, so far as they were examined, were healthy.

CASE XCVIII.—*Scorbutus; death sudden. Left lung œdematous; two pints of serum in the right pleura. The liver enlarged, mottled red and white; serous effusion in the head without symptoms.*

William Adam, ætat. 47, Joiner of the ship David Clarke, a ship just arrived, and from which several scorbutic men had been received into hospital. He was of sallow complexion and was admitted on the 5th March 1840; he stated that for a fortnight past, he had suffered from pain of the right hypochondrium, attended with difficulty of breathing, on

slight exertion, and increased by lying on the right side; that he had also suffered from cough. He was bled on admission with relief and took antimonial medicines; the blood taken coagulated firmly. During the 6th 7th and 8th, he complained little of his side, but chiefly of weakness, with sense of faintness, nausea and cold perspirations. At 1 P. M. of the 8th it was reported, that he fainted when at stool. He was carried to his cot and expired immediately.

*Inspection. Head.* At the depending part of the convex surface of the brain, there was a considerable veil of serum between the arachnoid and pia mater, and there was an ounce at the base of the skull.

*Chest.* On the left side there were eight ounces of serum and old bands of adhesion connected the pulmonary and costal pleura. The left lung was œdematous. On the right side there were two imperial pints of serum in the sac of the pleura. There were bands of adhesion at the posterior part of the lung, and, with the exception of the upper part of the upper lobe, the right lung was compressed. The heart was healthy and there were coagula of blood on the right side.

*Abdomen.* The liver reached from the 5th rib to three or four inches beyond the margin of the ribs, and almost to the crest of the os ilium; it was mottled red and white, and its texture was softened. There was a rosy tint of the mucous coat of the stomach and the follicles were distinct; the tunic was healthy.

The intestines, small and large, were much contracted but healthy in structure. The spleen was healthy.

## *Pneumonia. Gangrene of the Lung. Chronic Laryngitis.*

CASE XCIX.—*Delirium tremens complicated with Pneumonia. Great portion of the right lung in a state of hepatization.*

John Anderson, ætat. 45, Seaman, H. C. R. Ship Hastings. From the 27th October to the 2nd November 1842, was under treatment in the General Hospital for diarrhœa. After free living in the bazar for some days, he was re-admitted on the 13th November complaining of dysenteric symptoms attended with pain of the right hypochondrium impeding full inspiration; he had short cough with pyrexial symptoms and tremulous hands. He was entered in the hospital register under the head hepatitis. As delirium tremens seemed to impend, depletion was avoided, sinapisms and a blister were applied to the side, and ipecacuan. and blue pill with a small quantity of opium exhibited at intervals. On the 16th he was reported to have been delirious all night, walking about the ward.

The skin was hot and dry and the pulse frequent and easily compressed. The head was shaved and cold applied, and camphor mixture with antimonials exhibited. Towards evening, the breathing became oppressed and he died at midnight.

*Inspection* six hours after death.

*Chest.* Almost the entire of the right lung was in a state of red hepatization, other viscera sound.

*Abdomen.* Liver considerably enlarged but tolerably natural in texture.

CASE C.—*Pneumonia coming on insidiously during a course of excessive drinking. Extensive hepatization of both lungs.*

Henry —— ætat. 30, Clerk in the Military Auditor General's office. Was admitted into the European General Hospital at 8 P. M. of the 26th May 1843. It was stated that he had been drinking to great excess for some days previously; that the day before admission, he began to complain of pain at the margin of the left false ribs shooting through the chest. These symptoms continued on admission and the pulse was small and thready; the respiration hurried; and over the anterior part of the chest there was a general sonorous and sibilous rale; tongue white and dryish. A large sinapism was applied to the epigastrium and chest, and camphor mixture with spirit. æther. nit. was given every second hour. On the following morning the dyspnœa was urgent and the surface clammy. He died at 7 A. M.

*Inspection* five hours after death. *Chest.* The lungs did not collapse and there was no effusion into the pleural sacs. The posterior parts of both lungs were in a state of red hepatization for a very considerable extent and gave out much frothy sero-purulent fluid. The remaining portion of both lungs when incised gave out also much sero-purulent fluid and there were here and there circumscribed portions in a state of red hepatization. The mucous lining of the bronchial tubes was vividly red. Heart healthy.

*Abdomen.* Liver much enlarged; the mucous lining of the stomach was mottled red, here and there, but to no great degree. Other viscera healthy.

CASE CI.—*Pleuro-pneumonia. Chronic grey and red hepatization of the right lung terminating in gangrene.*

John Skinnell, ætat. 33, a Serjeant in the Grand Arsenal, was admitted into the European General Hospital on the 16th August 1843, suffering

from acute pain of the right side of the chest, which had come no suddenly and which prevented free motion and full inspiration. He was bled at the arm and leeched several times, and on the 19th, symptoms of delirium tremens came on and continued till the 22nd. Now he did not complain of pain of the side, but he was troubled with cough attended with muco-purulent expectoration, and on the 25th, the respiration anteriorly on the left side was puerile and on the right side about the nipple, there was mucous rale, and superiorly the murmur was also puerile. He continued till the 10th September, suffering more or less from cough with occasional febrile accessions and muco-purulent expectoration in small quantity; when on the 10th he expectorated 5 or 6 ounces of purulent fluid. On the 12th, on percussion of the right side of chest posteriorly, there was slight dulness, and about the scapular region there was large crepitus and increased resonance of the voice. On the left side posteriorly there was sibilus with large crepitus at the base.—From this time till the date of his death (the 25th October) he continued troubled with cough, losing flesh and latterly suffering from dyspnœa. The expectoration in the twenty-four hours, in quantity ranging from four to twelve ounces, generally had the appearance of pure pus, at times however it had a greyish tinge and was thinner; and on one or two occasions he complained of the extreme fœtor which attended its expectoration. Febrile accessions were sometimes observed, but always moderate. The stethoscope was not used after the 12th September.

*Inspection* five hours after death. The body was considerably emaciated.—

*Chest.* Old adhesions bound the right lung, throughout, to the parietes and were strongest posteriorly and to the diaphragm. The posterior and central parts of the right lung throughout its greatest extent were in a state of hepatization, part grey and indurated, part red, with several gangrenous portions broken down into dark grey cavities, and giving out a gangrenous fœtor. The left lung was also very adherent and gave out much sero-purulent fluid when incised, and pressed; it was also in parts in a state of red hepatization but had not advanced to gangrene. There were opaque patches on the surface of the heart.

*Abdomen.* The viscera were healthy; the liver perfectly so and very slightly adherent to the diaphragm.

CASE CII.—*Cholera, collapse recovered from, followed by Pneumonia and Pericarditis.*

Robert Morrison, ætat. 43, Seaman of the barque Barbara, was admit-

ted into the General Hospital at 11 A. M. of the 2d June 1842, having been taken ill in the course of the night with symptoms of Cholera. The symptoms were not urgent and after rallying from the state of collapse, on the 3rd, he complained of an uneasy load at stomach and on the 4th of pain of chest. On the 5th the pain of right mammary region was acute. He was leeched and antimonials were exhibited. On the 6th the pain was nearly gone but towards evening it had become aggravated and was attended with short cough; a blister was applied and the antimonials continued. On the 7th, 8th and 9th, he complained chiefly of weakness, and on the last day there was considerable dyspnœa. He died on the 10th.

*Inspection* five hours after death.

*Chest.* The right lung was throughout completely solidified being in a state of red hepatization, and when incised giving forth much blood-tinged serum. The pericardium contained several ounces of sero-puriform fluid; the surface of the heart and inner surface of the pericardium was coated with a thin granular firm layer of lymph.

CASE CIII.—*Ulcerated sore throat, in all probability Syphilitic, associated with chronic Laryngitis of twelve months duration. Larynx almost filled by a firm granular substance, adherent to the mucous membrane.*

James Redman, ætat. 30, Seaman, ship Catharine, was admitted into the General Hospital on the 19th July 1841, with ulcerated sore throat, occasional cough and soreness across the chest, but the previous history of the patient is not recorded, nor is the particular situation of the ulcers described. On the 25th August it is thus noted, "Complains chiefly of pain in the course of the trachea, in the line of the sternum, aggravated by an almost impeding deglutition. Respiration difficult and attended, on inspiration, by a tracheal ronchus. Has frequent cough; the expectoration seen is clear and frothy; the voice husky.—There is a good deal of vascularity of the pharynx with superficial ulceration; great part of the uvula and the pillars of the palate are absent. Skin cool and moist; pulse 92, of good strength; tongue clean; bowels reported regular. *Physical Signs.* The chest is clear on percussion but the sounds under the stethoscope are obscured by the loud tracheal ronchus; there are however no distinct moist rales." Lunar caustic blisters were several times applied over the trachea. Anodynes, diluted nitric acid or small doses of quinine, were given, and for some days, subnitrate of bismuth to relieve heart-burn

of which he complained, was used, and on the 13th September he left the hospital very much improved in health and quite free of the distressing symptoms. — Re-admitted on the 5th October, with recurrence of sore throat, ulceration of left tonsil and of the right side of the posterior fauces; had cough and was hoarse. Much variety of treatment was used and the ulcers began to clean about the 6th November, but as they improved, the signs of tracheal irritation became aggravated. About the 23rd December, dysenteric symptoms came on, and as these increased in severity, the urgency of the disease of the larynx and trachea lessened. Subsequently he again improved and was discharged on the 13th January, 1842. Re-admitted on the 28th January with recurrence of dyspnœa and tracheal cough and loss of voice. No ulceration of the internal fauces. He continued in hospital suffering from distressing dyspnœa and gradually losing strength, when on the morning of the 7th August 1842 he was found dead in bed.

*Inspection* fifteen hours after death, made and reported by Mr. Assistant Surgeon J. Peet.

Both lungs gorged with venous blood; ramifications of bronchi filled with mucus and presenting patches of congestion. Lining membrane of trachea studded with patches of congested vessels but without alteration of structure. On opening the larynx, the cavity was found nearly filled with a firm granular substance, projecting irregularly from the mucous membrane; between some of the projections, there were ulcers of some considerable size, and of various shapes. The growth from the mucous membrane appeared to be attached equally to all parts. The glottis was swollen and œdematous; epiglottis ulcerated, and partially destroyed. In no part of the air passages below the cricoid cartilage were there any ulcers.

*Abdomen*. Stomach distended with flatus; intestines healthy. Liver large, but unaltered in structure. Other viscera presented no abnormal appearance.

CASE CIV.—*Gangrene of the lungs, without condensation or hepatization.*

Frederick Ritch, a marine of H. M.'s Ship Endymion ætat. 20, suffered from fever in Bombay in July 1841, a time when many of the marines of that ship died from fever, typhoid in its character. The ship went from Bombay to the Persian Gulf, thence to Aden, where Ritch was invalided and sent to Bombay. He never recovered from the conse-

quences of the fever, was always on the sick list, chiefly with chronic dysentery; and labouring under that disease, he was admitted into hospital on 18th January 1842. The symptoms were urgent; frequent purging; florid tongue; febrile accessions; emaciation; doughy abdomen. He was treated chiefly with free opiates; never complained of cough, and died on the 21st February.

*Inspection* eighteen hours after death.

*Chest.* The lungs did not collapse, the anterior parts were inflated, the posterior œdematous. On the posterior part of both lungs, there was a green discoloured portion, which broke down readily under the knife, and gave out much greenish frothy serum; the cellular tissue was plainly disorganized, and the serum seemed to have been contained in a small cyst, rather than in the natural cellular tissue of the lung,—(gangrene with serous effusion into the cellular tissue of the lung, not preceded by condensation of that portion of the lung,—) No hepatization of any part of the lungs. Heart. healthy. *Abdomen.* The stomach much distended occupied the entire space between the ensiform cartilage, and umbilicus; its mucous coat was lined with adhesive mucus and presented throughout a dusky rosy tint, without softening. The liver rather enlarged, olive green in colour, and mottled; no abscess. The transverse portion of the colon was opened, the mucous coat presented numerous ulcers in different stages, many of them cicatrizing. Spleen natural. Kidneys healthy.

## *Diseases of the Heart, Aorta and Pericardium.*

CASE CV.—*Scurvy. The heart much enlarged from dilatation of both ventricles and of the right auricle.*

Maxwell Inston, ætat. 25, after having been ill with scurvy for two months was admitted into hospital on the 31st December 1839. He was very sallow, emaciated, and reduced, with spongy ragged gums and discoloured patches on the extremities. For a short time he improved a little, then remained stationary; subsequently began to lose ground and died on the 1st March.

*Inspection.* Surface sallow; body much emaciated.

*Head.* The brain was quite pale and exsanguine, there was a veil of serum on its convex surface, and an ounce at the base of the skull.

*Chest.* Both lungs collapsed, but there was œdema of the posterior part of the left lung. The heart was very much enlarged, fully twice its

natural size, and the pericardium contained four ounces of blood-tinged serum. The enlargement was caused by dilatation of the cavities of both ventricles and, very much, of the right auricle. The right side of the heart contained large brown red fibrinous polypi and red tinged serum, which flowed out when the cavities were opened. The substance of the heart was pale, and the walls of the left ventricle were about three quarters of an inch in thickness. The valves and vessels rising from the heart were healthy.

*Abdomen.* The liver was healthy and of natural colour. The stomach contained many grapes which he had just eaten. The mucous coat was of rosy tint, but firm. The spleen was healthy. The kidneys pale buff colour. The cœcum was distended. Many of the mesenteric glands equalled a horse bean in size. The urinary bladder was distended.

CASE CVI.—*Chronic Rheumatism. Death from pericarditis with obscure symptoms. Diarrhœa, with the mucous coat of the colon with dark grey patches and streaks. Two or three ounces of serum in the cavity of the cranium; no head symptoms.*

Thomas Clarke, Seaman, ætat. 48, emaciated and of sallow complexion. From the statements which were sent to the hospital regarding this seaman, it appeared, that in the early part of 1838, whilst on service in the Persian Gulf, he was affected with gonorrhœa followed by phymosis. He was brought under the influence of mercury, and whilst in this state, was exposed to cold on the voyage to Bagdad, in the month of July 1838, and in consequence became affected with rheumatism. In March, April, and May 1839, he was affected with a copper coloured eruption; suffered from restless nights, and pain of the hips and thighs. He was treated with decoction of sarsaparilla and blue pill, till the gums became tender, and he was sent to Bombay for change of climate.

He was admitted into hospital on the 16th July 1839; he stated that he had suffered from diarrhœa during the voyage, but that it had ceased. He was sallow and emaciated, and suffered from pains of the lower extremities, stretching along the shins, increased at night, and attended with thickening in the course of the right tibia.

A variety of treatment was tried,—hydriodate of potass with decoction of sarsaparilla or decoction of cinchona; quinine with diluted sulphuric acid; infusion of chreat, with diluted nitric acid; chalk and mercury; dover's powder; rhubarb and soda &c. according to the state of the bowels; anodynes, chiefly the tincture of the muriate of morphia at bed time. The

nitromuriatic acid foot bath was also tried. The emaciation, the sallowness, and the pains, continued with occasional diarrhœa, till the 9th September when it is thus reported:—"Pulse feeble and skin moist, was frequently purged yesterday. ℞. quinine, hydriarg. c. creta. gr. ii. opii. ss. confect. aromat. q. s. ut ft. pil. to be taken thrice in the course of the day. *Vesp.* No return of bowel complaint; pulse feeble. He takes no food. He is depressed. Contin pilul. every four hours; let him have ℥ii. of mulled wine now, and let one ounce be continued every second or third hour with sago." 10th "Is asleep at present; one dejection in the night. Continue as yesterday. *Vesp.* Has taken wine four times and three pills; skin is now cold and pulse feeble, and the respiration is laboured; he makes no complaint of pain. The sounds of the heart are natural and the respiratory murmur is heard on both sides anteriorly. Applic. emplast. vesicat. magnum epigastrio. Apply heat to the extremities, and sinapisms to the feet. Continue the wine ℞. mist. camph. ℥i. carb. ammon. gr. x. tinct. zingib. ℥iss. ft. haust, to be taken every second hour." Died at 7 P. M.

*Inspection* twelve hours after death. Body somewhat emaciated.

*Head.* The vessels exsanguine. The convolutions of the convex surface of the brain were partially veiled with serum, and there were between two and three ounces at the base of the skull.

*Chest.* The cartilages of the ribs were ossified, and required to be divided by the saw. There were firm and old adhesions of the left lung to the costal pleura. The right lung did not collapse, it was emphysematous anteriorly, and œdematous posteriorly. In the pericardium, there were three ounces of turbid serum, and the lining membrane was generally dotted red. The serous covering of the heart was in places opaque, and pearly; at the apex and over the left auricle, it was dotted red. The cavities of the heart, and chiefly those of the right side, were somewhat dilated, but to little extent. There was no hypertrophy; there were fibrinous polypi in both ventricles, and the valves were generally more opaque than is usual.

*Abdomen.* The mucous lining of the stomach presented a rosy tint, but was healthy in texture. The liver somewhat enlarged, was indurated, and mottled red and white. The contents of the colon were feculent, much of its lining membrane was streaked and patched dark grey, but the texture was sound. The follicles were here and there distinct. The spleen and kidneys were nearly healthy.*

* The following case is annexed from its resemblance to that, just detailed. The subject of it was in hospital about the same time, and the symptoms noted came on a few days after the unsuccessful issue of Clarke's case. My atten

CASE CVII.—*Pericarditis; the inner surface of the pericardium, and the outer of the heart lined with a thick layer of irregular lymph; also effusion of serum and displacement of the liver partly caused by the distended pericardium.*

John Devair, ætat. 25, Seaman, was admitted on the 12th November 1840. He stated that he had been ill for two months and a half, that his complaint began with pain of the abdomen shooting from the hypogastrium and the left side, thence through the chest. These symptoms were not attended with either diarrhœa or constipation or difficulty of micturition; but his statement was confused. He passed a restless night and on the 13th, the epigastrium was tense, resisting, and painful on pressure; and on percussion, the sound was dull almost to the umbilicus, and midway between the crest of the os ilium of the right side and false ribs, also extending into the hypochondrium. The breathing was a good deal oppressed; the skin above natural temperature; pulse 120, feeble and compressible; tongue pretty clean.

*Physical signs.* Anteriorly on the right side of the chest and below the nipple, the sound is clear on percussion. On the left there is much dulness, about the cardiac region, extending to the arch of the left false ribs and to the sternum; no bulging. Respiratory murmur on the right side anteriorly, good. On the left, clear but fainter, with a blowing

tion was at once arrested by the resemblance of the symptoms of collapse, and of much of the previous history of the two cases.

*Chronic Rheumatism; metastasis to the pericardium. Recovery.*

Adam Lowder, ætat. about 40, Serjeant, Nizam's Service, of broken habit from climate and sickness, was admitted into hospital for the second time on the 10th September 1839 ill with chronic rheumatism, affecting chiefly the ankles and head. On the 24th it was reported that "the ankles were less swollen and painful; headaches have ceased" On the 25th "was troubled last night with uneasy sensations about the back and chest; legs and feet more tumified." At the evening visit he had pain shooting from below the left scapula to the ensiform cartilage, and attended with much oppression and sense of faintness. The pulse feeble and skin cold; the sounds and impulse of the heart are feeble but not otherwise affected. The chest was blistered, sinapisms were applied to the feet and legs; he was cupped on the back; took calomel with tartar emetic and opium, finally, with ipecacuan and quinine, and the nitro muriatic acid foot bath was used. The chest symptoms decreased, the pulse became developed, the gums became affected on the 3rd October, and he was discharged well on the 14th.

sound in the line of the sternum; posteriorly on the right side, clear; on the left, fainter with occasional crepitus about the scapula. The action of the heart at the apex not increased, it is rapid and the two sounds are clearly marked; between the nipple and the sternum and extending to the right side, the action of the heart is more perceptible and the sounds are increased in loudness. In the line of the sternum there is an abrupt, sometimes clacking, single sound, mixing with the blowing sound of the respiration; (diagnosis marked) aneurism of the aorta at its base, with dilatation of the right side of the heart and effusion into the pericardium.

He continued suffering from oppressed breathing, the pulse frequent, small, and unequal, the surface sometimes above the natural temperature. There was a frequent short cough, a sense of weight in the line of the sternum, and chiefly at its lower part, with occasional paroxysms of pain shooting from the left side, upwards in the line of the sternum, excited by motion and eructation; when he turned on the right side, the pain affected the right mammary region; when he turned to the left, it was chiefly felt below the left false ribs. He was easiest on the back. Urine generally scanty and high coloured, was tested with heat, on one occasion, and found not coagulable. The abdomen was generally full and tense.

On the 20th the uneasiness of the chest and dyspnœa were increased, and he had suffered from rigors; the pulse was 100, very irregular, unequal with occasional intermission; the abdomen full and tense. Between the left nipple and the sternum, the action of the heart was perceptibly increased; and there was a very distinct fremissement, more distinct at that situation, than at the apex of the heart; (diagnosis marked) pericarditis, effusion of lymph on the surfaces.

There was now almost constant orthopnœa; pulse very feeble. On the 23rd the fremissement had ceased. He died on the night of the 24th. The treatment is hardly worth alluding to; he was cupped, leeched, blistered, took mercury with morphia, &c.

*Inspection* ten hours after death; body not much emaciated.

*Chest.* The pericardium completely occupied the anterior part of the chest and extended into the right side for some distance; its transverse diameter was fully ten inches, and it reached from the top of the sternum to the diaphragm, to which muscle it adhered firmly, as also to the inner aspect of both lungs. There were about twenty-two ounces of clear serum in the cavity of the pericardium. The inner surface of the pericardium was lined throughout with a layer of lymph, a line in thickness, with a

rough reticulated inner surface of dark red colour; this layer could be peeled from the pericardium with tolerable facility. The outer surface of the heart was coated with a similar layer of lymph, more firmly adherent however, and presenting a more irregular and reticulated external surface; where the greatest irregularity existed, thence (chiefly the posterior part) had passed thick bands of firm but friable lymph, about an inch or more in length, and which had connected the inner surface of the pericardium with the outer surface of the heart. The heart itself and the vessels were quite healthy.

The lungs with the exception of some old adhesions and some slight œdema were healthy, and there was trifling serous effusion, in the right cavity of the pleura.

*Abdomen.* The transverse colon much distended with air, occupied the umbilical region. The liver extended four inches below the sternum, and about three below the last right false rib, and also occupied a greater than usual extent of the left hypochondrium. The liver had been pushed thus lower into the abdomen by the distended pericardium. There was an abscess in the left lobe of the liver, lined with a firm membrane with flacculent surface; it was the size of an orange and was adherent to the diaphragm where opposed to the adhesions of the pericardium. The stomach was healthy. The cortical part of both kidneys were streaked white and red, and these organs were considerably enlarged.

CASE CVIII.—*Dilatation with hypertrophy of the left ventricle of the heart; disease of the aortic valves and ascending aorta.*

Pedro Vidauro, ætat. 32, a Frenchman of sallow complexion, who had made frequent voyages to India, and had generally enjoyed good health, was admitted into the General Hospital on the 23rd March 1839, twenty-two days after his arrival from Calcutta. He stated, that during the six previous weeks he had suffered from pain at the epigastrium, increased by pressure and shooting to the cardiac region, and left arm; that he was troubled with occasional short cough but did not suffer from palpitation; the pulse was 100 and wiry.

The following were the physical signs noted at the period of admission:

"There is an evident fulness over the cardiac region. The sound is dull on percussion between the nipple and the sternum, also, for three finger-breadths below the nipple, and for two, to the outer side, but there is no dulness above the nipple. The impulse is more forcible than natural, and is felt faintly to the right of the sternum. Both sounds of the heart are mask-

ed by bellows sound, which decreases from the cardiac region, and is not audible at the junction of the clavicles." He was bled to ℥x.; 24 leeches were twice applied to the cardiac region, and followed by a blister; tartar emetic solution was given in conjunction with tincture of hyosciamus; and from the 27th March, grs. ii. of calomel with ipecac. gr ss. and opii. gr. $\frac{1}{4}$ were given every night at bed time. Under this treatment, the symptoms were relieved, and on the 2nd of April he left the hospital with the intention of joining his ship, and proceeding to sea.

On the 8th April he was re-admitted. The uneasiness of the cardiac region had increased. 36 leeches were applied, and the antimonial mixture with hyosciamus again exhibited. On the evening of the 9th the pain was aggravated, and he was bled from the arm to six ounces. He passed a restless night. On the morning of the 10th, the pulse was 108, and irritable; the skin was above the natural temperature; the tongue clean; cough frequent and short; decubitus easiest on the abdomen. The physical signs were thus noted. "There is fulness of the cardiac region and dulness on percussion; the impulse is not very strong, and the sounds of the heart are masked by a general bellows sound. There is constant uneasiness increased by pressure at the margin of the right false ribs, and there is resistance and hepatic sound there."

About two hours after the above report, the breathing became much oppressed, the skin damp; the countenance pale, and the pulse feeble. A vein was opened but no blood flowed, and he died in about half an hour.

*Inspection.* Six hours after death. *Head.* There were about two ounces of serum in the cavity, and much blood flowed from the integuments and from the sinuses.

*Chest.* The lungs were pale and emphysematous, but not congested with blood or serum. In each sac of the pleura, there was about a pint of serum. In the pericardium, there was not much more than the usual quantity of fluid. The left ventricle of the heart was dilated to more than double its usual size, and was distended with blood, chiefly fluid, but the walls were not of more than natural thickness. The aortic valves were somewhat thickened. Above the valves, the artery was somewhat dilated, and its lining membrane thickened and irregular from ossified flakes, and spiculæ: this thickening extended to the arch of the aorta. The right ventricle of the heart was slightly dilated, but not distended with blood, and its tissues were in a natural state.

*Abdomen.* The liver extended about three inches beyond the margin of the ribs; its external surface was mottled dark red; but its cut sur-

face was of pale buff colour. The mucous coat of the stomach had a general rosy blush, (digestion was going on at the period of death) was mammillated, and was rather thicker and firmer in its texture than natural. The intestines, the kidneys, and the spleen were healthy.

CASE CIX.— *Dilatation and Hypertrophy of the left ventricle with disease of the aortic and mitral valves, and of the commencement of the aorta. Liver enlarged and mottled.*

John Garratt, ætat. 42, a Seaman admitted on the 29th August 1840, with confirmed disease of the heart. He stated that he had been thus affected for about twelve months, and attributed his illness to a fall into the hold of the vessel.

*Physical signs.* No perceptible prominence of the cardiac region. There was dulness on percussion in a line from the left nipple to the epigastrium; the impulse of the heart was strong, and the action tumultuous, and the sounds confused and masked by bellows sound. (The diagnosis marked) "dilatation with hypertrophy of the left ventricle; aortic valves diseased." He died on 4th November.

*Inspection. Chest.* The heart very much enlarged, occupied the entire of the anterior and lower part of the chest, and the apex was to the left of its usual position. The right side of the heart was distended with dark coagulated blood. The cavity of the left ventricle was about twice its natural size, and the walls were of rather more than their natural thickness; the mitral and aortic valves were thickened and gristly; the commencement of the aorta thickened, with its inner surface irregular from white deposit; the auricle was very much dilated, and the auriculo-ventricular opening much wider, and more patulous than natural. There was not much dilatation of the right ventricle, and the walls were of their natural thickness. There was no serous effusion into the cavity of the chest. Old adhesions bound the right lung to the costal pleura, and both lungs were spongy and without congestion.

*Abdomen.* There were about three pints of serum in the cavity. The liver was dark red in colour, irregular on its surface, and it reached as low as the umbilicus and crest of the os ilium, and when cut, shewed a mottled dark red and white marbled surface. The mucous coat of the stomach had a rosy tint, and was sound in texture. The spleen and the kidneys were healthy. The intestines were healthy externally.

CASE CX. — *Hypertrophy with dilatation of the left ventricle of the heart, ossific deposit in the aortic valves; general dropsy; scorbutic*

*diathesis, probably traceable to a sea life, and the induction of mercurial action.*

William Cain, ætat. 29, Seaman of the ship Thetis. On admission into the General Hospital on the 20th May 1842, he stated, that seven months previously he had been affected with inflammation of the bowels for which he was treated with mercury, and that whilst under the influence of that medicine, he caught cold and had ailed ever since, chiefly from cough and shortness of breath with hæmoptysis, and that under these symptoms he still continued to suffer. The face was puffed and pale, ;the abdomen full; the feet and legs anasarcous; the urine reported copious; the pulse was frequent and somewhat jerking in its beat; the tongue was clean but pale; the gums were spongy; the action of the heart was tumultuous with bellows sound; the impulse not very strong; but as the examination distressed him, it was not minutely entered into. On the 25th the urine became scanty and the dyspnœa increased, and an evening febrile accession, occasionally attended with vomiting, was added to the other symptoms. He died on the 1st June.

*Inspection* fifteen hours after death. *Chest.* There were several ounces of serum in the cavity of the left pleura, and adhesions connected the right lung to the costal pleura. The heart was much enlarged from hypertrophy of the walls, and dilatation of the left ventricle. There were ossific deposits with irregular surface, the size of a pea, at the edges of the semilunar valves of the aorta, and similar deposits were found in different parts of the mitral valve.

*Abdomen.* The liver of dark mahogany colour. The rest of the viscera apparently healthy.

Case cxi.—*Enlargement of the heart; firm adhesion throughout of the pericardium to the heart. Scorbutic diathesis.*

Alfred Gray, ætat. 17, Seaman of the ship Orator. After a voyage of six months duration, during which he had suffered from much sickness, chiefly rheumatism affecting the knee joints, he arrived at Bombay, and was admitted into the General Hospital on the 16th April 1842. He was emaciated and sallow, and the surface of the body was covered with petechial spots. The gums where somewhat swollen and discoloured; the abdomen was full, and the respiration hurried. The action of the heart was strong, and attended with heaving pulsation of almost the whole of the left side of the chest. There was dulness on percussion for a very considerable extent, around the cardiac region. The sounds of the heart were confused,

and masked by bellows murmur. The carotid arteries pulsated forcibly; the pulse at the wrist was feeble. He stated, that four years before, he had been ill with rheumatic fever, and that since that time he had frequently suffered from palpitation. The breathing became more oppressed, the face puffed, and he died on the 20th April.

*Inspection* at 2 A. M. The body emaciated, and the feet and legs œdematous.

*Chest.* Old adhesions connected in parts the pulmonary and costal pleuræ. The heart very much enlarged, occupied the anterior and part of the left side of the chest; and the pericardium adhered so firmly to the entire surface of the heart, by old cellular adhesions, that it could not be separated, but with great difficulty. The right ventricle contained red watery blood.

*Abdomen.* The stomach and intestines were considerably distended with gas.

CASE CXII.—*False aneurism of the aorta appearing above the sternum.*

Jose Maria, ætat. 39, of sallow habit, a native of Portugal, had suffered from a pectoral affection since October 1838, was admitted into hospital on 6th February 1839. "Rising above the junction of the right clavicle to the sternum, and passing about one-third towards its acromial end, is a pulsating tumour, stated to have been first noticed in October last and to vary occasionally in size; there is no pain and no tension of the integuments. Has dyspnœa and occasional short cough. These symptoms are increased on assuming the recumbent posture, when there is a wheezing sound heard with each inspiration; no strong action of the heart, nor in the course of the sternum; pulse full and firm; skin cool; states that his illness began with cold and sore throat, after recovering from which, the pulsating tumour appeared. He was bled three days since with relief. He continued in hospital for six days, suffering from frequent attacks of dyspnœa, for which small quantities of blood were abstracted from the arm at different times, and draughts of æther and muriate of morphia were given. It is noted in the report of the 12th, "at present orthopnœa; pulse of the right side feebler than that of left. There is strong action under the right clavicle, and in the line of the sternum."

At the level of the lower angle of the scapula, on both sides posteriorly, there is a wheezing sound, as if the air passed through a compressed tube. He died at 4 A. M. of the 13th.

*Inspection* four hours after death.

*Chest.* From the commencement of the arch of the aorta, there ascended the sac of a false aneurism filled with yellow coagula; it was about the size of the fist, and reached to above the sternum. The communication with the aorta was by a circular opening, with rounded edges, and of nearly an inch in diameter. The opening was anterior to the going off of the arteries from the arch, so that the sac compressed the inominata and about an inch and a half of the left carotid. The arteria inominata had its coats thickened, and was dilated to the size of a large almond. The ascending aorta was generally dilated, and coats thickened, and in the inner surface irregular. The walls of the left ventricle of the heart much thickened; the valves tolerably healthy.

CASE CXIII.—*True aneurism of the aorta; died comatose; four ounces of serum, chiefly at the base of the skull.*

John Ross, ætat. 36, a Cook on board a merchant ship, was brought to the General Hospital on the 2nd July, and died in about five minutes after his arrival. It was stated that he had been taken ill with a fit on board, and had been brought immediately to hospital.

*Inspection* fourteen hours after death. Body stout. There was a free inguinal hernia of the right side.

*Head.* Vascular turgescence of the membranes was moderate; there were about four ounces of serum in the cavity, chiefly effused at the base of the skull, or veiling the convex surface of the brain.

*Chest.* The lungs did not collapse; they were emphysematous, but not congested with serum or blood. The heart was healthy in size and structure; the valves were healthy with the exception of slight thickening of the aortic ones. Commencing about half an inch above the aortic valves, occupying the ascending aorta and the arch, there was a true aneurismal sac, with the coats of the vessel thickened, and the inner surface irregular from cartilaginous deposition. The sac in its transverse diameter equalled that of the fist; it was about four inches, in its long diameter, and formed a cul-de-sac, above and behind, the vessels given off from the arch of the aorta. The upper portion of the sac contained a small coagulum. The vessels given off from the arch were healthy, and so was the descending aorta. There were about four ounces of serum in the pericardium. The abdominal viscera seemed healthy, but they were not minutely examined.

*To be continued.*

## Article III.

### *The Annual Hospital Report for* 1842 *of the* 18th *Regiment, stationed at Baroda.* By F. S. Arnott, Esq. Assistant Surgeon.

Presented by the Medical Board, May 1843.

Having so frequently reported my hospital practice, I was not prepared to furnish a report for the past year, and have consequently been obliged to frame one since the arrival on the 13th January of the Medical Board's circular requiring one from every Regiment. Being so unexpectedly called upon, and having so recently reported fully on cholera, the only disease which has raged at Baroda, with any severity during the year, I purpose to treat with great brevity the sickness of 1842, and to devote this report rather to a short review of the Medical History of the Regiment under my charge, during the time it has been at Baroda.

The cantonment of Baroda is so well known, that a minute description of it here might be deemed superfluous. I will therefore enter no further into the subject, than merely to state a few particulars, which may have had influence on the health of the Troops.

The Vishnamuntry skirts the eastern and southern sides of the camp, and divides it from the city of Baroda, * which is about a mile and half

* Baroda the capital of the Gaickwar's dominions and the seat of His Highness's Government, is a large and flourishing city, with a population estimated at from one to two hundred thousand. Within the walls there are two good wide open streets, intersecting each other and dividing this part into four rather unequal divisions ; each of which is again irregularly subdivided by innumerable lanes, almost all narrow, crowded, unclean, and ill ventilated. The houses however are substantial, dry, tiled buildings, of from two to four or five stories.

The suburbs again are more irregular, but more open and exhibit the same thorough disregard of cleanliness.

The lamentable consequences of this utter neglect of cleanliness and defec-

distant. Its course is excessively tortuous, and generally its stream is sluggish, but in the monsoon it is deep and rapid, and sometimes overflows the lower parts of the camp ; whilst in the hot weather it is almost dry, and consists only of a few stagnant pools. For the public cattle, and for washing, it is a great convenience to the camp, as is also a small tank towards the north west limit, but drinking water is entirely supplied from the wells, which are abundant, as well in the Sepoys' lines as in the Officers' compounds.

The depth of the bed of the river, which is about 50 feet below the level of camp, together with its proximity to it, would argue the ready escape of surface water from the lines, but the banks are in many places high, and the site of the camp extremely level, so that until drains were cut water found its way to the river very circuitously, and stagnated in many places. Some years ago, however, the whole camp was thoroughly and scientifically drained, and as the soil is loose and sandy, not a drop of surface water can now be seen an hour after the heaviest rain. To this I think may be attributed, the improved health of the Troops at a station formerly not by any means famous for its salubrity.

The pendals for the men are in parallel lines running north and south, and are comfortable tiled buildings, with little room for vegetation between them ; without any receptacle for the accumulation of filth, and traversed by drains wherever required. Except the eastern and western ranges, they are consequently well sheltered from the east winds and south-west monsoon.

The Hospital is a commodious, airy, tiled building, calculated to contain fifty patients, and situated on a bend of the river at the east end of camp. It has an enclosed verandah with glass windows and doors on the north aspect, and an open verandah to the south. At three corners are small apartments ; one used as a surgery, and the others for apprentices, &c. The outhouses are also good. The compound is elevated and dry, with a good descent on all sides ; but a good fence round it is much required, as it would add much to its neatness and comfort, besides keeping at a distance all stragglers and idlers, as well as cattle, that at present rove about at pleasure, and above all it would enable the guards to confine the patients to the Hospital compound, which at present is impossible.

tive ventilation, on the crowded population, are evinced in the annual visitation of ague and bowel complaints, and the melancholy ravages at other periods of small pox and cholera, which last disease, as is elsewhere stated, carried off nearly 11,000 individuals in the short space of one month in 1842.

The Officers are accommodated in separate tiled Bungalows, surrounded and divided from each other by strong hedges of Euphorbia, and each compound is intersected, according to the taste of the proprietor, by numerous hedges of Mhendy, which is reared here with great facility, whilst Neem, Mango, different species of Ficus and Tamarind trees, with a great variety of shrubs, exist in great abundance in all directions.

The seasons may be divided into the cold, hot, and rainy. The first lasting from the beginning of November to the middle of February, the second from that time to the middle of June, and the monsoon occupying the remaining period of the year. The cold season is not inimical to health. In January and February the weather is cool and agreeable to the feelings, and refreshing to the system; the crops in the neighbourhood of camp are reaped; the country is open; ventilation free, and though the alternations of heat and cold are considerable, the health of the Troops is good. In the hot weather the vicissitudes of temperature are still less; the soil is dry, devoid of vegetation, and no noxious exhalations are generated, and as might be expected, this is always the healthiest period of the year.

In the monsoon the atmosphere is raw and damp, the ground soon becomes saturated with moisture, and vegetation is rapid and exuberant; but immediately on the cessation of the rain, the days became hot and sultry, the deep sandy soil rapidly absorbs every particle of moisture, and vegetation, lately so luxuriant, as quickly decays. The sick list now becomes very heavy. In the succeeding months again the ready supply of water affords ample means of irrigation, which is taken full advantage of, for raising culinary vegetables, &c. which are then produced in great abundance. Though it cannot be doubted, that such redundancy of trees and enclosures must temper the climate, and moderate the heat and glare, as well as the effects of sudden atmospherical changes, it may readily be granted, that prejudicial consequences may also result from such luxuriant vegetation, particularly during and after the monsoon. It may be a question, however, how far these disadvantages and advantages counterbalance each other, but while the sources of the one are so obscure, and the other so apparent, it is not likely that any ordinary interference would induce individuals to deprive themselves of such luxuries, or to consult any tastes but their own. At the same time, however, I must observe, that there is no cultivation except in the Officers' compounds within the limits of camp, and the greatest attention is paid to the cleanliness of the lines and compounds, and much of what is considered superabundant vegetation, is removed once or twice every season.

The following will shew the average range of the Thermometer and prevailing winds for each month during the last five years.

| Month. | Thermometer. | | | Prevailing Winds. |
|---|---|---|---|---|
| | Maximum. | Minimum. | Greatest diurnal range. | |
| January | 88 | 59 | 20 | East and N. East. |
| February | 95 | 59 | 27 | East and N. East. |
| March | 99 | 69 | 24 | N. E. and Westerly. |
| April | 104 | 73 | 24 | West. |
| May | 105 | 83 | 18 | W. and S. W. |
| June | 101 | 79 | 16 | S. W. |
| July. | 95 | 79 | 11 | S. W. |
| August | 91 | 76 | 9 | S. W. |
| September | 93 | 78 | 14 | S. W. and variable. |
| October | 93 | 72 | 18 | West. |
| November | 93 | 62 | 23 | N. N. E. and N. W. |
| December | 87 | 57 | 26 | East and N. East. |

Mean annual temperature . . . . . 83
Annual range of Thermometer . . . . . 58

*Quantity of Rain at Baroda, from* 1838 *to* 1842.

| Years. | May. | | June. | | July. | | August. | | Sept. | | October. | | Total. | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Inches. | cents. | Inches. | cents. | Inches. | cents. | Inches. | cents. | Inches. | cents. | Inches. | cents. | Inches. | cents. |
| 1838 | 5 | " | 5 | 10 | 12 | " | 3 | 4 | 1 | 14 | " | " | 26 | 28 |
| 1839 | " | " | " | 55 | 16 | 80 | 7 | 81 | 3 | 60 | " | " | 28 | 76 |
| 1840 | " | " | 10 | 67 | 8 | 40 | 1 | 15 | 2 | 20 | " | " | 22 | 42 |
| 1841 | " | " | 8 | 46 | 11 | 96 | 10 | 83 | " | 43 | " | " | 31 | 68 |
| 1842 | " | " | 5 | 95 | 16 | 76 | 10 | " | 11 | 92 | 1 | 50 | 46 | 13 |
| Average five years | 1 | " | 6 | 16 | 13 | 18 | 6 | 56 | 3 | 85 | " | 30 | 31 | 5 |

The 18th Regiment has now been five years at this station, and the following Table will show the degree and nature of the sickness in the corps during that time.

No. 1.

| Years. | 1838 | 1839 | 1840 | 1841 | 1842 | Total. |
|---|---|---|---|---|---|---|
| Strength | 778 | 911 | 1073 | 1078 | Rt. wing 580 | 4420 |
| Treated | 989 | 1713 | 1864 | 1717 | 1027 | 7285 |
| Fever | 663 | 1376 | 1363 | 1174 | 602 | 5178 |
| Died | 10 | 9 | 14 | 12 | 3 | 48 |

No. 2.

The next Table will show the monthly average of admissions for the five years.

| | January. | February. | March. | April. | May. | June. | July. | August. | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Admitted . . . . | 94 | 58 | 55 | 79 | 75 | 75 | 121 | 117 | 234 | 267 | 180 | 102 |

No. 3.

And I add another Table showing the proportion of deaths in each month, during the same period.

| | January. | February. | March. | April. | May. | June. | July. | August. | September | October. | November | December | Total. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Deaths. | 14 | 7 | 4 | .. | .. | 2 | 2 | 1 | 3 | 3 | 5 | 7 | 48 |
| Of which occurred from . . | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| Cholera . . . . . | 1 | .. | .. | .. | .. | .. | .. | .. | 1 | 1 | .. | .. | 3 |
| Diarrhœa . . . . . | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| Dysentery . . . . . | .. | 1 | 2 | .. | .. | .. | .. | .. | .. | .. | .. | .. | 3 |
| Fever . . . . . | 11 | 5 | 2 | .. | .. | 1 | 1 | .. | 1 | 1 | 5 | 6 | 33 |
| Hepatitis . . . . . | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| Other diseases . . . . . | 2 | 1 | .. | .. | .. | 1 | 1 | 1 | 1 | 1 | .. | 1 | 9 |

No. 4.

Table showing the prevailing disease at Baroda, in the 18th Regiment N. I. during the five years, with the proportion of deaths.

| Prevailing Disease. | Number of cases of Fever treated in five years. | Number of Deaths. | Proportion of Deaths to cases treated. |
|---|---|---|---|
| Fever . . . . . | 5178 | 33 | 6⅓ per 1000. |

During the five years no Officer died at Head Quarters; one who left Baroda after the rains of 1840 to take up an appointment in Bombay, lost his health and died at the Cape in May 1841. One went on sick certificate to the Neilgherry Hills in 1839, and returned to his Regiment

after an absence of two years ; and two others left Baroda for a change to Bombay, but after a short stay at the Presidency, were sufficiently recovered to rejoin the Regiment. There have been no casualties among the Officers' wives, and only one child has died during the five years.

From the first Table it appears, that the sickness during the five years, has been at the rate of nearly 165 per cent of the strength, and that the deaths have been at the rate at of about $\frac{1}{24}$ per cent of strength, and about $\frac{65}{100}$ of the men treated.

The next Table shows the comparative good health enjoyed by the Troops during the first half of the year, and how much it is deteriorated during the other half, the proportions being nearly 1 to $2\frac{1}{2}$, and these proportions are fully borne out if we assume, which virtually is the case, that the admissions in January are merely relapses, or the consequences of the sickness, in the preceding months.

This Table at the same time shows, that Fever is the prevailing form of disease, as upwards of seventy one in a hundred, or nearly three fourths of the whole, are Fever cases.

The sickly season commences generally about the middle of August, but some times as early as July, (as in 1841) and continues increasing up to the latter part of October or beginning of November, when symptoms of improvement gradually begin to manifest themselves, and by the end of the year, the sick list is reduced to moderate bounds.

In Table No. 3, I have given the number of casualties in each month of the year for five years, together with the diseases from which the casualties occurred, and as was to be supposed, from Fever constituting nearly three fourths of the total sickness, nearly three fourths of the deaths occur from that form of disease. The great degree of mortality that characterizes the month of January, is a remarkable peculiarity in the Table, that might not at first have been anticipated. No less than 14 out of 48 fatal cases, or upwards of a fourth of the whole number, happen in January, though the preceding Table shows a great diminution of admissions not only in that, but in the two preceding months. It might be inferred, that though the number admitted is fewer, disease now assumes a different and more severe form. This I have not observed, and I ascribe the greater mortality of January, chiefly to the exhaustion of long continued sickness, terminating in dropsy, diarrhœa, or visceral disease, under which the patients at last sink. Something, however, may also be attributed to the season ; for though the cold months, and January particularly, invigorate those in health, sickly and emaciated people with

broken constitutions, suffer much at this period, and sink in greater numbers than at any other. The diurnal variations of temperature alone, scarcely offer an explanation of this peculiarity, as they are not greater than in the preceding and succeeding months, but taken together with the strong piercing E. and N.E. winds, which so often prevail at this season, and which so often aggravate visceral disease, and bowel complaints, may be considered sufficient to account for it.

After these general observations, I will advert very shortly to the Hospital Practice of the year just ended. I have great gratification in finding that only three deaths occurred in 1842, with an average strength of 580, and a sick list of upwards of a thousand;—a degree of mortality amounting to little more than $\frac{1}{2}$ per cent of the strength, and $\frac{29}{100}$ or little more than $\frac{1}{4}$ per-cent of men treated; an average which scarcely exceeds that of the most healthy stations of any country. But it is in regard to the fearful visitation of cholera in the month of July 1842, that I have reason to be thankful in a special manner, for the success of the arrangements made to prevent the invasion and diffusion in camp of that disease, when it was committing unheard of ravages among the inhabitants of the city, about $\frac{1}{2}$ mile distant. It is ascertained, that in one month it carried off little short of eleven thousand individuals; but I rejoice to say only four men of the 18th Regiment caught the disease, and of these every one recovered. The arrangements I suggested were fully and promptly carried into effect, and I believe were the means of saving many valuable lives, but as these measures, as well as my practice both in the town and camp, have already been laid before the Board in my Report on Cholera dated 27th September last, I abstain from entering on the subject here. To conclude this report, therefore, I will merely add a few remarks on fever, the only other disease that has prevailed to any extent, at this station during the year.

The Fever of Guzerat I have not found to be the formidable and intractable disease that it was formerly considered; on the contrary I look upon it as the most mild, and if taken in time, the most manageable form of fever, I have had any experience of. It is a simple, uncomplicated intermittent, and the utter want of any prominent or urgent symptom, is its chief feature. In the incipient disease, there is seldom any local affection to attract the attention of the medical man; there may be headache and functional derangement of the stomach and liver, during the paroxysm of Fever, but during the intervening period, the headache and irritability of stomach subside, and rarely indeed is there any indication of

structural disease, either in the cerebrum, the thorax, or abdomen. The only dangers I can mention as belonging to this disease, are its occasionally yielding very tardily to medicine, and great tendency to return, in which cases at a more remote period may be apprehended the usual consequences of ague, induration and enlargement of the spleen and mesenteric glands, terminating most frequently in protracted emaciation, dropsy, diarrhœa, and death.

Occasionally a case occurs of a man who has been exposed in the jungles to the eastward, or who may have been on escort duty, and in addition to the unavoidable exposure of a march, is without medical treatment for several days ; such a case, of course, I do not include in the preceding description. Here we may expect a disease of a more severe description, and almost always complicated with some local affection, which demands the greatest circumspection. Cerebral congestion, which if not relieved soon terminates in effusion, is what in such cases I have generally observed ; more rarely there has been Gastro-Enteritis ; very seldom pulmonary disease.

As has already been observed, the fever generally met with, is the intermittent, and the most common type it assumes, is the tertian, and next in succession the quotidian and quartan. In many instances, however, and especially in protracted cases, it is extremely irregular in this respect, and the paroxysm occasionally occurs twice in twenty four hours, or on the other hand only once in 4,5,6. or 10 days. The paroxysm itself also, is at times equally irregular, the stages not following the usual course, or one of them being entirely wanting. These however are the exceptions to the common form, which is generally either the tertian or quotidian.

Treatment. If on admission the constitutional derangement is considerable, or symptoms denote determination to an internal organ, a general bleeding is had recourse to, and is either repeated, or succeeded by leeches to the part, according to circumstances, and these are again and again repeated, according to the urgency of the attack and the patient's strength, till symptoms are alleviated, or if possible removed. It is not often that such severe cases occur, but when they do, the chief part of the treatment is directed to the local determination until it is removed. Bleeding in the cold stage, I have not had occasion to practice during the year.

As heretofore, I have found the utmost benefit from evacuants, freely and repeatedly administered, as they more effectually, than any other class

of remedies, destroy that tendency to visceral congestion, which always exists. The plan of cure is, therefore, generally commenced with an emetic, followed by a purge: antimonials and calomel are then given for a short time; the action of the intestinal canal being kept up, by the frequent repetition of cathartics. After a healthy action is excited in the primæ viæ, bark or quinine with sulphuric acid may be safely given, but in many cases, these are not required, the fever seeming to cease, as soon as the balance of the circulation, has been established by evacuants.

To prevent a recurrence of the paroxysm, quinine of course is the usual remedy. It is given at first in doses of two grains, in powder or solution, with diluted sulphuric acid and water, three or four times a day, which may be increased to eighteen or twenty grains in the twenty-four hours. If the disease proves obstinate, arsenic or bark are tried, and it is sometimes a good plan to try them alternately, as they are not in this way as likely to lose their effects. By the kindness of some friends I have been enabled to try Warburg's drops, but whether it was that the medicine was old or not genuine I don't know, but in my hands it has uniformly proved perfectly inert: and I have never observed it to have any effect on the system whatever. I herewith send the last case in which I tried it. Mercury with a view to ptyalism is occasionally used, where the inaction of the hepatic system does not readily give way, but where it can be avoided it should not be pushed to any extent, as in certain constitutions it is productive of very serious after effects; as rheumatism with sleepless nights, want of appetite, and dropsy with tedious convalescence, and frequently unfitness for further service.

* Convalescence is assisted by light aromatic bitters and aperients,

* I append a short extract from my Report on the Hill Fort of Powanghur, dated June 1839, which to the European convalescent may appear interesting:—"As a convalescent station it possesses advantages well worthy of consideration; with a temperature fifteen or twenty degrees below that of the plain, its pure air, constant light breeze from the south-west, wholesome water, cool and bracing nights, magnificent scenery, and accommodation that might at small expense be rendered very comfortable, I consider it well adapted as a place of resort to those suffering from the debilitating climate and diseases of Guzerat, and feel convinced that it may be safely recommended, and might be often resorted to in cases of constitutional debility or slow recovery from disease, when a longer trip promising no greater advantages might be inconvenient or impracticable. To the inhabitants of Baroda it appears to me to possess incalculable advantages, from its extreme convenience and proximity to that station, and though I will not enter into comparison between it and the sea coast, I may add that there are many forms of disease for which it is equally adapted."

and I have found nothing more useful in this way than an infusion of creat with a small quantity of senna, with a little tincture of bark or some other tonic, added according to the circumstances of the case.

*Supplementary to the Annual Report for* 1842.

| Disease. | Number admitted during the year. | Discharged. | Died. | Remaining. | Average age of patients. | Average number of days under treatment. |
|---|---|---|---|---|---|---|
| Fever . . . | 602 | 583 | 3 | 16 | 27 | 7 |
| Hepatitis . | " | " | " | " | " | " |
| Dysentery . | 36 | 33 | " | 3 | 22 | 6 |
| Cholera . . | 7 | 6 | " | 1 | 28 | 11 |
| Diarrhœa . | 30 | 30 | " | " | 22 | 8 |

I am induced to add an extract from the diary of a very intelligent patient, who visited the place in April and May 1841. "A person must in such a barren field for occupation depend much on his own resources for amusement. The benefit to be derived from the change of climate is, I must say, the only inducement that can be held out for visiting Powanghur, and I can from experience say, that the benefit I derived from a residence there of almost two months, was decided and very great."

## Article. IV.

*Could the Natives of a temperate climate colonize and increase in a tropical country and vice versa?* By Arthur S. Thomson, M. D. Assistant Surgeon, 14th Light Dragoons.

Presented, September 1843.

The soundest knowledge of human nature was evinced by Cortes, De Gama, and Albuquerque, in describing to their countrymen in glowing terms the wealth of the East and West Indies, and in proclaiming the advantages of colonizing in those countries, without at all hinting that the new regions were not well suited for their constitutions ; strong inducements, without any drawbacks, being in those days required, to make men undertake, the magnified dangers of distant migration. The constant intercourse which has since that period taken place, among the different nations of the globe, ought to have furnished us with an accurate knowledge of the climate and aboriginal inhabitants of different regions, and whether certain countries are adapted for the settlement of different races of men. The experience however of more than three centuries, has apparently not furnished us with that decided knowledge of the tropical parts of the world, and the susceptibility of those countries for European colonization, which we ought to possess ; that this is the case may be observed from the following extracts.

Mr. Crawford, late British resident at the court of the Sultan of Java, published in 1820, a history of the Indian Archipelago. By profession a medical man, he was in 1808 nominated to the Medical Staff of the Prince of Wales Islands, and after a stay of three years at that station, Lord Minto, from Mr. Crawford's knowledge of the language, and manners of the Natives, employed him in a public capacity in the expedition which conquered Java in 1811. I quote this account of Mr.

Crawford to give weight to the following opinion of his on the settlement of Europeans in the tropics. "In the unappropriated land" Mr. Crawford observes "of the Indian islands, there is abundant room for the colonization of the human race, and unlike the desert promontory of Africa, or the superior but isolated and distant continent of Australia, they would find abundant objects to engage their industry ; the first settlers feel indeed the inconveniences of the heat, but the constitution of their descendants, immediately adapts itself to the climate which they are born to inhabit." *

It has been proposed with the view of rendering our Indian possessions more secure, to form European Colonies in Hindoostan, but many well informed men have objected to this, thinking that a race would be produced which at some future day might imitate the Spanish and Portuguese settlers in South America by throwing off the yoke of the mother country. Sir John Malcolm, an officer who had resided forty years in India, in giving his opinion as to the advantage of raising recruits in India for the Army, by encouraging the settlement of British Subjects in the country, states, "I cannot think that such settlers would ever fill our ranks with recruits, equal to those which are freshly imported from England, and there is no other mode in which I can contemplate any benefit to the public interest as connected with the Army from such colonization, and I should apprehend that superior pretensions, and the place they occupied in the community, combined with the difference of habits and religions, would be likely to create a hostility in the minds of the Natives, which would far outbalance any support of a military nature, that could be anticipated from such settlers." † But Sir John Malcolm never doubts the most important circumstance, viz. whether the European settlers could live and produce pure offspring in India for three generations, although in his political history of India when alluding to the colonization of Europeans in India he allows, that in a few generations, from the climate and connexion with low ignorant women, the settlers are likely to become degenerate.

Experience on the subject of colonies is apparently learned but slowly, and even when a settlement is found to be unfortunate, the true cause of the failure is rarely given, should the truth be opposed to the wishes or preconceived theories of those concerned. The failure of several colonies

* Crawford's Indian Archipelago.

† The Government of India, London : 1833.

in Africa did not prevent others being made, nor did the experience acquired at the pestilential shores of Bulama, convince the Directors of the Association that the climate was the chief cause of almost all the settlers dying.

These general observations I have entered on, and others might be quoted, to show the practical usefulness of an extensive inquiry into the subject. The limited extent of the books it has been in my power to consult, has prevented me making the following sketch any thing but a rough outline. In the examination of the question I shall first inquire into those

*Colonies formed by the inhabitants of temperate climates in tropical regions.*

*In the East Indies.* The successful voyage of Vasco de Gama opened to the different European Powers a new road to India, by the Cape of Good Hope. The Portuguese, Dutch, English, French and Danes, entered on this untrodden field for enterprize, and at different periods, settlements were made by those nations, either on the continent of Asia, or on the islands situated in the Indian Ocean.

The Portuguese and Dutch were the most zealous settlers; both those nations colonized very extensively in India nearly three hundred years ago. It is almost certain that most of the followers of de Gama and Albuquerque were unaccompanied with females, and that on their arrival in India they intermarried with the Natives; still for many years after the settlements had been formed in India, the Portuguese and Dutch arrived annually at certain seasons in great numbers from their native land, and I cannot therefore refrain from thinking that many females accompanied those latter settlers; and I draw this conclusion from the manner in which the Portuguese colonized in South America, and also from the desire which most men have, to associate with females of their own country or nation. It is difficult to give any idea of the number of the Portuguese who settled in India, but the number must have been very great. Mr. Jonathan Duncan, in the fifth volume of the Asiatic Researches, gives an historical account of the coast of Malabar translated from a native work, in which when alluding to the Portuguese it states, "and they became rulers in all the towns and cities, and swarmed therein and reared fortresses in numerous places." In the present day (so far as I am aware) there is not one pure descendant of either the Dutch or Portuguese, who settled in India two hundred years ago. The races of men in India which now

boast of Dutch and Portuguese descent, are both mentally and physically degenerate, and they present a good example of the injurious effect of climate on the descendants of Europeans in India, although with them, their constitutions are rendered more adapted to the climate by a union with the aboriginal inhabitants. The French settlement at Pondicherry and the Danish settlement at Tranquebar, are both in a state which can give no favourable example of the advantage of the colonization of Europeans in India.

The inhabitants of Great Britain have lived and have been in possession of parts of India long enough to enable us to draw some conclusion on the influence of the climate on them. The mortality which occurs among the British soldiers is nearly four per cent annually, but this amount of death cannot entirely be attributed to the climate, as the Bengal Civil Servants die only at the rate of two per cent per annum, * and as this fact is founded on forty years observation it must be allowed to be an approximation to accuracy. The excess of the mortality among the soldiers above that of the civil servants, is partly caused by the civil servants leaving the country for change of climate when they fall sick, and it therefore exhibits the least injurious effect of the country on men who can supply themselves with every comfort which is necessary for protection from sickness. The mortality however occurring even among the civilians, is nearly double the amount of death which takes place, among the same class of men, living in England.

From what has therefore been observed of the English in India, it may be concluded, that but a small number of those who come out in the prime of life resist the climate entirely, and few reach an advanced age; that their offspring will rarely reach maturity unless removed to a temperate country, and should the children of the English not be removed to a climate in some respects analogous to that of their forefathers, they become stunted in growth and debilitated in mind; the second generation of English will be in every respect worse, and is there on record a pure third generation of Indian British progeny ?

The following three examples of successful migration or colonization in India, although geographically from a temperate to a tropical country, yet the transition of climate was so slight as not to produce any obvious injurious effect; for after this manner the human race must have been diffused over the surface of the globe:—

Ist The ancestors of the Parsee race of men at present settled in India

* Mr Prinsep, Secretary to the Bengal Government.

were originally inhabitants of Persia. Driven out of that country in consequence of refusing to embrace the Mahomedan religion, they first retreated to the deserts or the mountains of Khorassan; many years afterwards they migrated, first to the island of Hormuz where they remained fifteen years, and afterwards to the island of Diva where they abode nineteen years; from this island they embarked and landed on the Continent of India A. D. 717. The Parsees in Western India are sprung from this stock, and their present numbers are estimated at fifty thousand.* They are increasing in numbers and are the most enterprizing race in Western India.—

2nd Along the Malabar Coast of the Peninsula of India, there are numerous colonies of Christians, and tradition gives them the title of the Christians of St. Thomas; their origin is doubtful and is disputed; in outward appearance they almost resemble the natives of the country. In the neighbourhood of Cochin on the Malabar Coast there is a race of men denominated white Jews, and they are supposed to have settled in the country not long after the destruction of Jerusalem†.

3rd There are about fifteen millions of Mahomedans in India ‡, the descendants of those who either settled in India after the different successful Mahomedan invasions, or were attracted from their own country by the more fertile plains of Hindoostan. This race is increasing in India and appears well suited to the climate.

*European Settlements in the Indian Archipelago.*

The large and numerous islands in the Indian Archipelago, having land fertile as the plains of Hindoostan for cultivation, and thinly peopled with inhabitants, are recommended by Mr. Crawford as countries well adapted for European colonization. "The example" Mr. Crawford states "of the vigorous race of genuine European blood bred in the hot plains of South America under the very line, would seem satisfactorily to prove, that the long entertained notion, that the European race undergoes from the mere effects of Climate, a physical degeneracy when transported to the native countries of the black or copper coloured races, is no better than prejudice;" and Mr. Crawford therefore strongly recommends Europeans to settle on these islands.

The Dutch and Spaniards in the present day are the only European races now existing as colonists in these islands. The principal Dutch set-

* Wilson's Parsee Religion. 1842

† Buchanan's Christian Researches.

‡ British Empire in the East,

tlements are in Batavia, Borneo, Sumatra, Celebes, and the Molucca Islands. Although these settlements have existed for so many centuries, the number of the white population is extremely small and consequently their increase cannot be reckoned. In all the Dutch colonies the nature of the climate is confirmed by the above statement, and I doubt if there be one person of pure Dutch descent in the Archipelago, even of so late importation as three generations. The largest Dutch settlement is in Java. The fatality of this Island was sadly experienced by the British during and after their conquest of the place, and the Army now kept up by the Dutch for its protection suffers much also from the climate.* Lord Kames in his history of man † states "the offspring of Europeans born in Batavia soon degenerate; scarce one of them has talents sufficient to bear a part in the administration; there is not an office of trust but must be filled with Native Europeans."

The *Spanish Settlements* consist of the Phillipine Islands. Although established so early as 1564, they at present possess a very small European population, estimated at not more than three thousand. This fact proves there must exist some cause which prevents the increase of the Spanish settlers, and this is rendered more obvious when it is considered that these settlements have existed for upwards of two hundred and fifty years, and have enjoyed during that time a frequent intercourse with the European continent.

The group of the Nicobar and Andaman Islands in the Indian ocean, have been three times colonized by Europeans. The Danes in 1756 formed first a commercial settlement, and in 1768 a Missionary establishment, but both attempts were abandoned on account of the climate. The English with the object of affording supplies for their ships made settlements at two places in the year 1791, but both stations were abandoned on account of the climate.

In one or two islands in the Indian Archipelago, which were formerly colonized by Europeans, and which are now nearly almost abandoned, a few people exist who pride themselves on European descent. With the vices of the Europeans and the failings of the natives, these half-castes, in place of acting as a stimulus for the colonization of the islands, rather tend to act as warning beacons to prevent others from settling; for if a European gives the question a moment's consideration, he must see, that either his children must in a few years cease to exist, or what is worse,

* Earl's Eastern Seas.

† Sketches of the History of Man, three volumes.

by a union with a native woman, his offspring will acquire all the infirmities of the European and Asiatic races.

*The Island of Mauritius.*—More favourably situated than any of the islands in the tropical parts of the Indian Archipelago for the settlement of Europeans, is the island of the Mauritius. Bordering on the temperate zone and possessing a comparatively genial climate it has been colonized for a length of time. The slow increase of the population indicates that the climate is not peculiarly favourable for the propagation of the settlers.

| | | | | |
|---|---|---|---|---|
| In 1767 | the white population | in | the Mauritius | was 3163 |
| 1797 | Ditto | Ditto | Ditto | 6239 |
| 1817 | Ditto | Ditto | Ditto | 7375 |
| 1827 | Ditto | Ditto | Ditto | 8111 * |

The increase here exhibited cannot entirely be attributed to the births, as fresh settlers are frequently arriving in the island, and it is usual for the rich inhabitants to give to their children the benefit of a European education, a change which tends to lessen the injurious effect of the climate.

The British soldiers quartered in the island, die in the proportion of three per cent per annum, an amount of death which is about double what occurs in temperate climates, an ample reason of the slow increase of the white race, and a sufficient proof that a vigorous population can almost never exist. These remarks may be applied to the French Island of Bourbon, situated in nearly the same latitude.

The Sychelles is the name given to fifteen small high and rocky mountains, near the Island of the Mauritius. About 1768 the French formed a settlement on the largest ; the colony has gone on increasing, but whether from births or fresh arrivals I cannot say.—In 1825 the white population in all the islands was 582. †

*Colonization of the tropical parts of Australia.*—The Northern parts of Australia which are situated within the tropics have been proposed and suggested from their proximity to the Indian Archipelago as favourable regions for the formation of a European Colony.‡ It has also been proposed to form a penal settlement on this portion of the continent. § Voluntary emigrants may select any country they please to settle on, but no British Government could propose a country situated within the

* Martin's Colonies.
† Owen's Voyage to the Coast of Africa.
‡ Earl's Eastern Seas.
§ Transportation and Colonization, pamphlet.

tropics as a penal settlement, without openly avowing their object to be not solely transportation, but also to increase the sufferings of the offenders by exposing them to a greater amount of sickness, and death, than they would experience in a country suited by nature for their constitutions.

*European Colonies in Tropical Africa.* — Various attempts have been made at different times, by several European nations, to colonize in the tropical parts of Africa. These attempts may be said to have all failed, and although some forts are at present kept up along the coast, still the endeavour at colonization may be said to have ceased.

One of the most unfortunate attempts to colonize in this part of the world, was made by the English under the command of the celebrated Captain Beaver. On the 14th April 1792, 154 men, 57 women, and 64 children, in all 275 souls, left the shores of England to settle in the African Island of Bulama, which is situated about north latitude 11° 36′ and is estimated to be seven leagues in length, by from two to five in breadth. The emigrants arrived at Bulama about the commencement of the rainy season, and they immediately erected a log house; not many days had elapsed before sickness became prevalent, and towards the latter end of October, disease and death had made sad ravages, among the numbers, and on the discipline of the emigrants. About the end of September the establishment was reduced to fifty eight, of whom thirty were sick. Thirty of the colonists embarked for England about the middle of November because "it was death to stay" in the colony, and on the 1st of December the whole settlement now reduced to 28, was sick. On the 29th November 1793, which was little more than a year from the occupation of the island, the few remaining emigrants, finding they were hoping against all hope, left the settlement for their native land. Of the 275 colonists who embarked from England, few were so fortunate as to return, and of the thirty who abandoned the Island, a large majority expired on the passage or had contracted incurable diseases.

The cause of the failure of this sad attempt at colonization, was the deadly climate, but so completely are men liable to overlook the true cause of any misfortune, should that cause happen to be opposed to their wishes, that we find Captain Beaver, on his being requested by the Bulama Association, to give his opinion of the cause of the failure, and of the probability of future success, sending in a statement concluding with the avowal "that success might be commanded, provided greater firmness was shown by those who go out, and those who remain at home than had been exhibited in the late expedition." For my own part I do not see what

greater firmness could be shown by colonists, seeing that most of them gave to the experiment their lives. Captain Owen in his survey of the African Coast in 1825, went on shore to visit the state of the Beaver settlement; not a vestige of the establishment was found in existence, the spot almost insulated with mangrove creeks, was overgrown with trees, shrubs and ant-hills. The Portuguese have lately made a settlement in the Island, although remonstrated against by Colonel Findlay then Governor of Gambia.

*Fernando Po.*—The unsuccessful attempt at colonization at Sierra Leone stimulated the British Government to form a settlement in 1827 on the island of Fernando Po. The high and mountainous nature of the island gave the prospect of a healthy climate, a hope which practical experience did not confirm. Of thirty European settlers taken out, nineteen died, and Colonel Nicholls the Governor, was three times attacked with fever in a very short time, after which the settlement was abandoned. I have inserted the above attempt simply to state that it ought never to have been made; the experience of others ought to have been an ample warning to ourselves. The Spaniards in 1778, wishing for some situation on this coast to carry on the slave trade, ceded another place to the Portuguese for the island of Fernando Po, and they endeavoured to form a settlement, but the unhealthy nature of the island and the hostility of the natives obliged them to relinquish the colony.

*Madagascar.*—The French nation have made frequent attempts to colonize the Island of Madagascar, or the small islands which surround it.* They have still three small stations. France has four times endeavoured to form a settlement on the island of St. Mary, which is thirty-one miles long and from two to three in breadth. In the first attempt the climate obliged them to abandon it, in the second they were massacred by the natives, in retaliation for some cruelties they had been guilty of. In 1821 they fitted out an expedition and took possession of the Isle of Madama, which is the third attempt to form a settlement on St. Mary. The settlers arriving in January, which is the commencement of the rainy season, were attacked with severe sickness, so that in three months their numbers were reduced from 290 to 130 †. In 1829 the French again endeavoured to form a settlement on Madagascar but with no success.

* Voyage to Madagascar, &c. by the Abbe Rochon.

† Owen's Voyage. Boteler's voyage to South Africa and Arabia.

Other examples equally unsuccessful to those quoted might be given of attempts at colonization in tropical Africa. The history of the Portuguese and Spanish colonies, from the days of their settlement at the celebrated Melinda down to more modern times, is a subject full of interest in many ways; in one point it shows the spirit and energy which the Spaniards and Portuguese fought, against a deleterious climate, more fatal, than the most desperate enemy.

*European colonies in Tropical America.*— Shortly after the discovery of the new world, the Spaniards, Portuguese, English and other European nations, colonized in South America, into the present state of some of their settlements I shall now briefly examine.

*Spanish Colonies*.—Ten years after the discovery of America, the whole of the continent from North to South, was traced out by European navigators. The Spanish nation, anxious to procure every advantage, which the country afforded, were the most active in the field of American discovery, conquest, and colonization. They first took possession of several of the West India Islands, and after having extirpated the aboriginal inhabitants of these islands by their cruel Government, they abandoned most of them, for their more extensive possessions on the continent. Mexico, Cuba, Guatimala, Puerto Rico, Colombia, &c. are the chief colonies planted by the Spaniards in this part of the world. The Colonists on the continent, have lately emancipated themselves from all dependence on the mother country.

Humboldt in his personal narrative gives the following abstract as to the state of the white population, in the following countries of Spanish America.

Europeans and descendants of Europeans, without mixture of Negro and Indian blood, the pretended race of Caucasus ;

| | |
|---|---|
| Mexico contains a white population of | 1,230,000 |
| Guatimala Do. Do. Do. | 280,000 |
| Cuba and Puerto Rico | 339,000 |
| Colombia | 642,000 |

This information regarding the population of the above countries given by Humboldt, although not of very recent date, is even in the present day reckoned, as accurate, as any statistical data, which modern writers have been able to contribute on the subject.

*Mexico.* This extensive country was one of the first conquests made by the Spaniards on the continent of America. The judgment and daring of the intrepid Cortes, the hero of Mexico, forms a history which no one can peruse without admiration and regret. Only one-third part of the whole surface of Mexico is situated within the tropics, so that the greater part of the one million and a quarter of white people, are living entirely within the temperate zone. The greater number of the white population in the tropical parts of Mexico live in the elevated regions, and as four thousand feet above the level of the sea gives to the atmosphere the coolness of the temperate zone, most of the inhabitants, are therefore, not in a tropical heat. In the neighbourhood of the capital of Mexico, the ordinary mean temperature is about the same as that experienced at Rome, * which is less than the heat in the southern parts of Spain. It is only therefore in the low parts of the country, which are situated along the coast that a true tropical heat is experienced and in those regions, the Spaniards are not able to live and keep up their original numbers. When Europeans or their descendants, reside, during the hot season in the towns along the coast, yellow fever often breaks forth and proves very fatal. Thus at Vera Cruz the population which is estimated at 16,000 inhabitants, is often swept away by the yellow fever.

*Guatimala* contains a white population of 280,000 ; but this estimate according to late authorities is much too high. About the year 1829, according to Thompson † the country contained of Europeans or perfect whites, not more than five thousand. Guatimala is about twice the extent of the British islands, and although not elevated so much as the table land of Mexico, yet it possesses elevations which produce the climate and fruits of a temperate zone. I am unable to ascertain whether the white population are merely temporally settled in the country for the purpose of working the mines or pure descendants of the Spaniards. The sea coast is hot and moist, and as the country is mountainous, rain falls often and in large quantities during the whole year. The sea coast proved extremely unhealthy to the first Spanish settlers, and in the official Report of Government, regarding the military defence of Guatimala, after mentioning the different points defended, the report states, " the first enemy that the European has to encounter, is the climate;" an ample proof that its character for insalubrity is well established. ‡

* Malte Brun.

† Narrative of an official Visit to Guatimala London 1829.

‡ Malte Brun, Murray's Geography. &c.

*Colombia* is a large thinly inhabited country having the Andes running in three parallel lines through its centre. By Humboldt the white population is estimated at 642,000. Most of them live in the elevated regions, where the climate is completely temperate, while the neighbouring sea coasts situated within the tropics are very unhealthy. Malte Brun states, in allusion to the Spanish Colonists settled in Colombia, "This district suspended as it were in the air is a little Europe, surrounded with an African belt health reigns; throughout it, while fevers and death dwell around it; if the Americans defend the ascent, where every position is in their favour, the battalions of Europe must perish without a battle."

*Cuba.* This is the largest of the West India islands; Diego Velasquez one of Columbus' companions in his second voyage in 1511, landed with three hundred followers on the island, and without the loss of a man, he annexed this extensive place to the Spanish monarchy. The white population is stated by some at 257,000. * In 1827, they were estimated at 317,000. * No conclusion can be drawn from the state of the white inhabitants of this island as to their increase or decrease by births; for during the last thirty years, and more particularly after the separation of the continental colonies from Spain, colonists have been encouraged to settle in the island, and Cuba has therefore been adopted as a place of refuge by a large number of the expelled Spanish residents of the continent of America, who adhered to the European Spanish Government.

*Puerto Rico.* This island extends about 120 miles in length and 40 in breadth. In 1508 a settlement was first made on it, by Juan Ponee de Leon, but it was much neglected until about the middle of the last century. Since then, it has rapidly increased in wealth and population. Colonel Flinter in his account of the island states, that the white population in 1828, was 150,311, that the number of deaths was 21 per thousand, and the births 37 per thousand, consequently there was an increase of the Spanish progeny of 16 souls per thousand; during the year 1828. There can be little doubt that the white population has increased much during late years, for this island, like that of Cuba, hasafforded a home and protection to several thousand colonists expelled from the American continent, for adhering to the royal family of Spain. Colonel Flinter undertakes to "prove that white men equally as people of colour born within

* Communications concerning Cuba.

the tropics can work in the field as well as the natives of Africa." The white people of Great Britain living in the West India islands, although not exposed to the labours of the field, suffer so much from the climate, that I fear Colonel Flinter is wrong if he includes among "white men" the British. With regard to the Spaniards labouring in the field I have no fact to oppose to Colonel Flinter's statement, but should think he is in the wrong from what has been observed in other countries, and also from the failure of the experiment made by the Spanish Government, of transporting peasants, to the Southern States of America, for the purpose of tilling the ground, without the assistance of slaves.

### *Portuguese Colonies in Tropical America.*

In the year 1500 the king of Portugal, fitted out a fleet and placed it under the Command of Pedro Alvarez Cabral. On sailing to the west, to his surprise he discovered a country which is now known by the name of Brazil; it was attached to the crown and colonized by the Portuguese.

*Brazil* embraces nearly all the eastern tracts of South America, and consequently includes both tropical and temperate countries; Humboldt has estimated the white population at 920,000, and according to a report made to the king of Portugal in 1819 the white population was 843,000. Mr. Mathewson * states that from a comparison of various authorities, the white population at the highest does not exceed 600,000. I am unable to obtain any information as to the increase or decrease of the white races or their distribution, whether along the coast or in the interior, and more elevated parts. When it is considered that Brazil has been colonized for more than three hundred years, and that the white population is so small in a country so extensive and productive of the food of man, it is naturally inferred that there must be some cause which retards the increase of the population. In the tropical parts of the country where the temperature is about 80,° I have little doubt of the climate proving unhealthy, and this being the chief cause of the slow growth of the white men. Mr. Caldcleugh † when alluding to the effects of the climate on Europeans, states, "The climate is too warm, the native vegetation too rapid, and food is raised with too much facility; indolence, sickness and death, are the consequences." The following unccessful modern attempt at colonization in Brazil confirms the opinion of the unsuitable nature of

* Narrative of a visit to South America in 1825.

† Travels in South America by Alexander Caldcleugh, Esq. London 1825.

the tropical parts of the country, for the flourishing of European settlers.

The king of Portugal in 1820 endeavoured to form a colony of Swiss in Brazil, as they were represented to him to be a race of men of more moral habits than other Europeans ; one thousand Swiss families were embarked from Hamburgh and Amsterdam for Rio de Janeiro, and on their arrival in the country they were marched to a district near Canto Gallo at the head of the Bay. The tropical climate soon began to have effect on the number of the emigrants and on their health ; the colony in consequence of discord and sickness (the former evidently caused by the latter) was broken up, and this attempt at Swiss colonization in Brazil, proved a complete failure.* The causes of the failure are no doubt differently accounted for, but it is stated by an author who writes on this subject, that "blame rests with both parties (Government and Colonist), and some portion with the climate."

Mr. Langsdroff, a Russian, possessed an estate on the borders of the tropics in the neighbourhood of Rio Janeiro, called Mandivea. He endeavoured to form a colony of Europeans, and brought over for this purpose about two hundred Germans ; his terms of agreement were loose and much too severe, so that all of the settlers excepting fifty left him.† From this colony no inference can be drawn ; it is merely inserted in this place, to show one of the many attempts made to induce Europeans to settle in the tropics, a measure which is productive of so much misery.

The Portuguese have made some small settlements in Guiana ; the climate has been found along the banks of the Rio Negro extremely unhealthy for Europeans. The Portuguese felons are banished to a small settlement in Guiana.

*English Colonies in Tropical America.*—For nearly one hundred and fifty years after the discovery of America, the West India Islands remained in the hands of the Spaniards, who afterwards abandoned most of them. Towards the latter end of the 17th Century, the English and French may be said to have divided the islands between them : since that period, island after island has fallen into the possession of the English, either by conquest or treaty; three of those settlements I will mention.

*Barbadoes.*—This place afforded an asylum to many of those who suffered persecution during the the iron age of the civil wars in England,

* Caldcleugh's Travels in South America.
† Captain Owen's Narrative.

and it was the earliest settled and improved of all the possessions of Great Britain.

| | | | |
|---|---|---|---|
| In 1650 | the white population | was said to be | 20,000 |
| 1670 | Ditto | Ditto | 50,000 |
| 1724 | Ditto | Ditto | 18,295 |
| 1786 | Ditto | Diito | 16,177 |
| 1809 | Ditto | Ditto | 13,794 |

The white inhabitants therefore in Barbadoes, were in 1809 little more than a fifth part what they were in 1670; about 1830 the white people were estimated at 14,000. The causes assigned for the destruction of the white population (although fresh emigrants were constantly arriving) are, hurricanes, the opening of the island of Jamaica to enterprise, and occasional severe sicknesses. The last I fear has been the chief cause, an opinion which is supported by the fact, that the British troops quartered in the island lose annually by death, one man out of every twenty two, a mortality which is three times greater than that which occurs among soldiers in a temperate climate *

*Jamaica.*—This beautiful and fertile island, has been gradually colonized since it was conquered in 1655. The progress of the white population has been extremely slow.

| | | | |
|---|---|---|---|
| In 1768 | the white population | was estimated at | 17,947 |
| 1775 | Ditto | Ditto | 18,500 |
| 1817 | Ditto | Ditto | 30,000 |
| 1834 | Ditto | Ditto | 35,000 |

Here there is a decided increase, but so small as to prove the increase has been solely caused by fresh arrivals from Europe and not by births. This is rendered more obvious when it is considered that during twenty years, the white soldiers died in Jamaica at the fearful rate of 121 men out of every thousand, annually, an extent of suffering which defies increase by births.

On the conquest of Jamaica, Cromwell who had estimated the proper value of this island to Great Britain, formed a plan for its improvement and security. He proposed and urgently held out great advantages to the people of New England, to allow themselves to be transported to the is-

* Martin's Colonies, Edward's West India Islands, Halliday's West Indies, Reports on the health of the Troop, &c.

land of Jamaica, a proposal which the colonists of New England declined, fortunately, both for themselves and their descendants. *

*Montserrat.*— This island was conquered and colonized in 1632, and in 1648 the white population was 1360. In 1791 there were about 1300 white people, and in 1828 the European population and their descendants were reduced to 315.

The other settlements in the West India islands might be quoted as showing equally unsatisfactory results, but what has been adduced, sufficiently proves how unfavorable these islands are for the European constitution, and I shall not therefore extend this paper by examining into the other islands. The mortality which occurs among the British troops quartered in the West India islands, will carry to most the conviction, that no settlement of the English would be able to keep up, far less to increase their numbers, solely by birth.

The British nation have made few attempts to form settlements on the continental parts of Tropical America; the few which have been made may be said to have proved unsuccessful—I shall briefly mention them.

In 1695 a company was established in Edinburgh under the name of the Scotch Darien Company, for the purpose of commerce with South America. In 1698 the Company endeavoured to establish a colony on the isthmus of Darien, but it is stated that the first success of the settlement was not supported by the British Government, and in consequence the colonists were dispersed by the Spaniards about a year after their arrival in the country. A writer † when alluding to the failure of this colony, remarks, " and thus vanished the best project that ever was formed for disputing with that nation (Spain) the possession of those countries from which she pretends to exclude all other nations." This attempt would not in all human probability have succeeded, even if the British Government had given it their support, for it was on this part of the continent of America, where the Spaniards first endeavoured, under the directions of the intrepid Balboa, to plant colonies, and these settlements the Spaniards were obliged to abandon in consequence of the climate; for example, Pedrarias, one of the Spanish leaders, landed at Darien in July 1514 with 1200 men, and in the course of a month about 600 perished in the greatest misery from sickness.

Great Britain, by the treaty of 1814, was confirmed in the possession of the Dutch settlement of Berbice and Essequibo, places which extend about

* Robertson's America. † Rees' Cyclopaedia.

three hundred miles along the coast of America, and the whole district is now denominated British Guiana. In 1827 the white population was estimated at eight thousand; the climate is characterized by heat and moisture, and resembles that of the West India islands; settlers are liable to malignant fevers. The mortality among the British Troops quartered here, averaged annually 84 deaths out of every thousand, an amount of deaths which renders every attempt at colonization fruitless.

During the speculative year of 1825 in Great Britain, a company was formed denominated the Colombian Agricultural Association. This company sent out a colony of two hundred settlers to La Guayra, which is the sea-port town of the Caracas in Colombia. The climate of the country differs, as has been already stated according to the elevation. Of the two hundred emigrants landed at the sea-port of La Guayra, a considerable number died, and the remainder were conveyed to the United States. This endeavour to form a settlement in the low parts of Tropical America, ought never to have been attempted after the failure of the king of Portugal to establish a Swiss colony in Brazil, only a few years previously, and which is mentioned under the head of Brazil.

Several other European nations besides these quoted, possess settlements in the tropical parts of America. The French have got settlements in the West India islands and in Guiana. The Dutch have got the islands of Curaco and St Eustace, and Surinam in Guiana. The Danes are possessed of the islands of St. Cruz and St. Thomas, and the Swedes have the island of St. Bartholomew. The state of the white population in these tropical settlements ought to have been examined, but it has been already stated how unhealthy the different West India islands prove and also the settlement of Guiana ; and to limit the extent of this sketch, I omit the examination of them, an omission of no great importance, seeing that the number of Europeans resident in each place is small, and subject to constant change.

## *General Remarks on the European Colonies in the Tropics.*

In the preceding history of the different European colonies in the tropics, it will have been observed, the island of Puerto Rico is the only place where there is any thing like evidence to prove, that the natives of the temperate zone are keeping up their numbers by births, in a country where the mean temperature is about 80° Fah. It appears to me that little confidence can be placed on any conclusion drawn

from this island, for although in the year 1828, * the births exceeded the deaths, still this fact is only for one year, and the year quoted might have been a healthy one, for in the West India islands sickness is generally periodical. Let it be granted that the births among the European settlers exceeds the deaths, will the children born and reared in the island possess a vigorous constitution, and will they produce a healthy offspring? In India the proportion of births among married Europeans quartered in healthy stations always exceeds that of the deaths, but it has been previously stated, the children are with difficulty brought to maturity, and their offspring if they ever have any, are worse in those respects than the first generation. Again, Colonel Flinter the author quoted regarding Puerto Rico, writes with an anxious desire to make the island appear highly favorable for Europeans. This desire to think favorably of a climate under which a person may have lived for some time, is no unusual circumstance, even in a country highly injurious to life. Ask the European who has lived for many years in Jamaica or India, and who has personally not had much sickness, nor has seen his intimate friends afflicted, whether the country is a healthy one, and very possibly he will answer that it is an excellent climate, and that the deaths among the European Soldiers are to be attributed to other causes than the climate. For these reasons, I am inclined to think the Spanish settlers in Puerto Rico are not keeping up their original numbers by births; the increase of population as has been stated is attributable to the arrival of the expelled American Spaniards from the continent.

The elevated parts of South America, where the mean annual temperature is much below 80 Fah. (and where the fruits and flowers of a temperate climate are produced), is the only region within the tropics, where Europeans have lived and propagated their pure species for two hundred years: but are those settlers in South America keeping up their original numbers by births and increasing according to the laws of population? In answer to this question, I must state, that neither accurate nor even probable statements can be quoted, as to the number of Spaniards and Portuguese who originally migrated to South America. By some writers it is mentioned that such was the mania for migration, that Spain was almost depopulated; by others, that during the whole space of three hundred years not more than five hundred thousand Spaniards landed as emigrants in South America. Benzoni in his history of the New World, states that in 1550, fifty-eight years after the discovery of America,

* See account of the island previously given

the number of the Spaniards in all the provinces of the new land, did not exceed fifteen thousand, but Robertson affirms that Benzoni wrote in the spirit of a malcontent, and consequently was inclined to detract from the Spaniards in every particular, so we are completely ignorant whether the European settlers in South America have increased or diminished. There can be little doubt some cause has retarded the increase of the settlers, when we consider how slow their numbers have increased during the last eighty years, compared with other countries, and the retarding cause appears to have been the climate. The country is gifted with an abundance of the necessaries of life, and in Mexico, such is the fertility of the soil, that wheat yields a return never under seventy and sometimes as much as a hundred fold,* while in great Britain the average is only nine to one.

Although we are unable therefore to judge of the effect of climate on the increase of the Spanish settlers in tropical America, still its effect is well marked on their characters, for they are described by many travellers to have degenerated much from the race out of which they have sprung. Indolent in their habits, and without energy in their minds, they have managed to exist, but that existence has been a kind of animal one, for they have contributed little or nothing to the general stock of human knowledge; easily amused and like children easily excited, they have generally acted on the impulse of their feelings at the moment, and in the present day they find ample employment in their mutual quarrels, which will continue until a more enlightened feeling springs up among the majority of the people, or until a powerful hand grasps the reins of Government. The historian Alison, when alluding to the extent of Mexico, and with astonishment at the fertility of the soil, concludes, "But notwithstanding all these advantages, it is more than doubtful whether the Spanish race is destined to perpetuate its descendants, or at least retain the sovereignty of the Country."

The opinion quoted in the above paragraph is in part confirmed by the rapid advancement which North America is making. Already the people of the United States think that the first step to the colonization of South America has been begun by the colony which has been formed in the Texas, and it has been surmised, that before many years have elapsed, Mexico will be peopled by the Anglo-Saxon race; and it has been anticipated by those, who look for retribution of evil done in this world, that the present Spanish descendants in Mexico, may partly become extinct,

* Humboldt.

or at least lose the sovereignty of the country, and the Spanish race will thus, in a mitigated degree, experience, some of those miseries, which their ancestors the first settlers inflicted, in extirpating with unmitigated cruelty the inoffensive aboriginal inhabitants of the West India islands.

The Texas, abovementioned, is a tract of country stretching north and south along the gulf of Mexico; it cannot be considered however as a tropical settlement, because the Rio de Norte has been adopted as a boundary, yet it is such a near approximation to a tropical colony, that I cannot omit here alluding to it. Mr. Bollaert, read lately before the Geographical Society of London, a report on the present state of the Texas, in which he states the white population amount to sixty thousand, and the average temperature during several months of the year is 80\'\' Fahr. The success which has hitherto attended the increase of the Anglo Saxon race in the temperate parts of America will, I fear, decrease when they attempt to propagate their species in the tropical regions. They may easily conquer and even people the country, like the Spaniards, but two hundred years will not elapse before the enervating effect of the heat will render the Anglo-Saxon race as degenerate in mind and body, as the present Spanish races are in South America. Let those who intend to emigrate look to the southern countries of the United States, where the Europeans are even now said to have shortened their lives; for example Dr. Brown in the article malaria of the Cyclopedia of Practical Medicine, mentions, that in Georgia and Virginia the extreme term of life is about forty years, and he affirms on the authority of Dr. Jackson, that at Petersburgh in the United States, a native and permanent inhabitant rarely reaches the age of thirty eight years. For these statements there must be some grounds, although I have no doubt they are much exaggerated.

It is necessary here to recollect that every tropical region, where Europeans have either colonized or have settled, the severe duties of tilling the ground and procuring food have been chiefly performed by the Aborigines. In no country, having a climate approaching to that of the torrid zone, have Europeans been able to expose themselves to the vicissitudes of the climate. and hard labour, without injuring their constitutions. The Spainards in South America found the truth of this, for after having emancipated the aborigines of the country from forced labour, they could not cultivate the soil themselves, and they were obliged to commence the practice of slavery, and for this purpose to purchase Africans from Africa. The Spanish Government by way of experiment on this question caused a

number of peasants from the Azores to be transported into a district of Louisiana in the southern part of the United States: these settlers still cultivate the soil without the assistance of slaves, but their industry is so languid as scarcely to supply their most necessary wants, * and if this apathy occurs in a temperature not altogether tropical, it is not likely to be improved by working in a purely tropical country. Mr. Bollaert in his report on the Texas, gives it as his opinion, that the white settlers must look for the proper cultivation of the soil to the negro race, the heat of the climate unfitting white men for this labour.

Let me now conclude this part of the sketch by stating, there is little doubt, the tropical parts of the world are not suited by nature for the settlement of the natives of the temperate zone. European life in those parts is with difficulty prolonged, much sickness is suffered and their offspring become degenerate and cease to propagate their species in a few generations; and should necessity force Europeans to perform the drudgery of life by labouring in the field, their lives will be rendered still shorter, and their existence will be little better than a prolonged sickness; like the plants of the torrid zone forced to grow with artificial heat in a temperate country, they bear ill any exposure to the climate, and like them they degenerate very much.

*Could the Natives of a Tropical Country Colonize in a Temperate Climate.*

This is the reverse of the preceding migration but of which kind of migration there are few examples on record. The facts which it has been in my power to collect, from the history of the human race, limited as these examples are, sufficiently shows that the natives of the tropics resemble the inhabitants of the temperate zone, in being peculiarly adapted to the climate of their race, and that the indigenous tropical people are not at all likely to be able to keep up their original numbers by births in a temperate climate.

*On the African race living in the temperate parts of America.*

With the discovery of America commenced the system of transporting the Africans as labourers to the new continent. A few zealous protectors of the American Indians having relieved them of part of the slavery to which their conquerors had reduced them, found (as has been

* Tocqueville's Democracy in America.

already stated) after they had done so, that the soil could not be properly cultivated and improved, without the labour of the natives. In this difficulty Las Casas gave origin to the scheme of purchasing Negroes from the Portuguese settlements along the coast of Africa. So early as 1503 a few Negro slaves had been sent to the New World, but in 1511 Ferdinand permitted the transportation of them in large numbers, and in 1517 Charles the fifth granted a patent to a company to transport four thousand Negroes into America, and this may be said to have been the commencement of the traffic which has been carried on ever since. About the year 1616, the first importation of Negroes into the English settlements of North America was made by a Dutch ship, and the Africans both in the tropical and temperate parts of America have been increasing up to the present date. It is only here necessary to consider the increase of this race in the temperate regions.

In 1790 the slave population in the United States was 694,280
1820 Do. Do. 1,538,118*

and Darby in his view of the United States informs us that the slave-population in 1830 amounted to almost two millions.

From the great extent of the United States, the climate of the western and southern countries differs from that of the northern. In the Southern States the heat is almost tropical, although placed in temperate latitudes, and it is in this part of the country where most of the Negro population are resident, very few living in the northern parts where the climate is cold. In the Southern States the Negro race is said to increase faster than the Europeans, but in the Northern, the Africans are said to be slow in their increase; emigration however presents difficulties which prevents our accurately ascertaining the relative increase of both races in America. In 1810 the population of the state of New York was 959,049 white persons, and 40,350 blacks; in 1825 the white population was 1,616,458 and 39,979 were blacks, and during all this time New York was resorted to by the free Negroes for employment. In Massachusetts slavery has ceased to exist since the declaration of the Independence of America, and this State has consequently been a favourite residence of the blacks, and yet they have slowly increased during the last thirty years, notwithstanding the emigration of the Negroes to Massachusetts for the sake of the protection she extends to them.†

* Malte Brun.

† Notions of the Americans by Hallburton.

In the Southern States the black race increases, and in some of the northern districts they keep up their numbers although they do not increase much. This increase takes place I am inclined to think solely from the arrival of fresh Negroes from the tropical countries, for I cannot find any well authenticated fact to show that the Africans are increasing entirely by births in a district where the average temperature is 60 Fahr. In support of this statemcnt, and of the opinion, that the Negro race diminishes in temperate regions, I have to adduce the two following facts drawn from the number of deaths.

In Philadelphia from 1820 to 1831, only one death occurred annually on an average out of every 42 of the white population, while during the same period, one Negro died annually out of every 21 living, a mortality double that of the whites and a proportion of deaths which must prevent any great increase by births.*

In New York among the white population during the year 1837, one man died out of every 34 living, whereas among the black population, one death occurred during the same year out of every 22 living, † a simple fact which shows how deleterious the climate proves to the African constitution.

An inference may be drawn also that the climate is unfavorable to the Negro race from the disease which proves so fatal to them in New York, viz. consumption.

In 1827 at New York out of 718 deaths, 100 died from consumption.

‡ 1837 Do. 702 deaths, 165 § died from consumption. Consumption is not a disease among the Africans resident in the districts where nature has given them birth. Dr. Winterbottom, who was Surgeon to the colony of Sierra Leone for many years, in his account of the native Africans, mentions, when speaking of consumption that "as an idiopathic disease I do not recollect to have seen a single case." Mr. Park in his account of the interior parts of Africa, states, that the diseases of the Negroes appear to be few in number, that fevers, and fluxes, are most common and fatal. Mr. Oldfield mentions || that the coast

* Emerson's Medical Statistics, p. 28.

† American Journal of Medical Science.

‡ Hawkins Medical Statistics.

§ American Journal af Medical Science.

|| Memoirs by Mr. Oldfield, Surgeon to the late expedition to explore the African Coast.

of Africa near the river Nuun is very unhealthy, and that the natives are subject to diarrhœa, dysentery, and a variety of cutaneous diseases. No mention is made of consumption, a disease which would have been noticed if it had produced one-fourth of the whole deaths as at New York.

The want of sufficiently ample materials, to illustrate the insalubrity of the temperate parts of the United States, to the Negro race, has made me draw arguments from the prevalence of consumption. It is necessary for me here to state that the African race in the West India, Ceylon, and other tropical islands, suffer also to a severe extent from consumption, so that the prevalence of pulmonary disease among the Africans in America, cannot be attributed to the coldness of the atmosphere.

During the American war, a body of Africans, took part, and assisted the British Government in defending the Colony. Shortly after the termination of the war, twelve hundred Negroes who had been thus employed, petitioned the British Government to remove them from Nova Scotia on account of the coldness of the climate; a petition which was granted and they were transported to Sierra Leone. This simple fact, although it affords no proof that the climate was detrimental to their constitutions, is sufficient to show how severe must have been their sufferings from the cold, and it may generally be laid down as a rule in nature, that when a climate produces oppression either by heat or cold, on the feelings, it almost invariably becomes injurious to the health.

During the year 1810, a body of African troops (4th West India Regiment) were quartered in the fortress of Gibralter, but the climate produced so many deaths from consumption, that it was found necessary to withdraw them and remove them to the tropics: the medical history of the above given by the medical officer is very limited.

The Sierra Leone Company, anxious to introduce the benefit of education into the colony, transported a number of African children for education to England. They suffered severely from the cold climate, seldom surviving the third year. During the first year, says Dr. Pearson, they were tolerably well, fell off during the second, and the third year generally proved fatal.

These are all the instances I can find of the migration of the Africans in a body to a cold country; I shall now examine the removal of the tropical inhabitants of America, and the following is the only example of this race being removed in a body which I can find.

*Removal of the Aboriginal Inhabitants of Tropical America.*

In the St. Augustine war, which took place in the year 1702, a body of Spanish Indians were captured in the tropical parts of South America, and sold as slaves in New England, but they soon suffered much from the coldness of the climate and most of them died of consumption. *

*Removal of the Natives of Tropical Asia.*

Ever since the communication of Asia with Europe by the Cape of Good Hope, instances of solitary migration have been constantly occurring. In most of these individual instances the cold climate often proved injurious to the health, and frequently destructive to life. There is, however, no instance on record, which I am aware of, where a large body of the natives of tropical Asia, have migrated to a cold climate for permanent settlement. The genius and daring spirit of the British rulers of India has furnished us, with two modern remarkable examples of a temporary removal of the natives of Hindoostan, to a temperate country, and in both these instances, although the period for observation, was short and the injurious effect of a cold climate had not sufficient time to act so as to produce its worst effects; still the examples are such, that in the absence of others of more value it is better to record them.

During Napoleon's invasion of Egypt, an Anglo-Indian army of nearly seven thousand men embarked from India, and landed at Cosseir bay, in 1801. The army was composed of 3,042 sepoys, inhabitants of the tropical parts of India, and they were stationed in Egypt about sixteen months, during which time 326 sepoys died. This is a mortality of about 10 per-cent per annum. Many of the sepoy Regiments were less than sixteen months in Egypt, consequent on the difficulty of providing transports, for them both to and from Egypt; this circumstance I mention, as an average rate of mortality has been drawn for the sake of comparison.

When it is recollected that the sepoy dies in India at the rate of about one and half per cent per annum, and that by a transference from a climate of 80° to that of a country where the climate ranges from 49° to 70° degrees, the mortality rose to nearly 10 per-cent per annum, an inference must be drawn, that the natives of India will never be able to colonize in a temperate country. Plague and fever were the most fatal diseases among the sepoys in Egypt. It has been stated by authors

* Gordon's Polit. Summary, Vol. 1. page. 174

that Egypt was colonized from India, a question not now likely to be determined, but the fact quoted, imperfect as it is, would lead us to support the latter opinion.

The late unfortunate expedition into Affghanistan, has afforded another example, of the injurious effect of climate on the natives of India. It was observed that many of the sepoy Regiments which were only temporally stationed in Affghanistan, did not apparently suffer much from the climate; the length of time to which they were exposed to the cold, was scarcely sufficient to produce injurious effects; other Regiments which had been stationed in the country for a greater length of time seemed to suffer, but the deleterious influence of the cold climate may not have been rightly felt, until the return of the sepoy to the comfort of quarters in India. Lady Sale in her Journal of the disasters in Affghanistan states:—"The sipahies complain bitterly of the severity of the weather (Cabool) particularly at night, and above sixty men are in hospital at the Bala Hissar already, besides the wounded, they are attacked with pneumonia which carries them off in the course of a couple of days." This is a disease to which the sepoys in India are not peculiarly liable.

*Concluding Remarks.* Superficial as the foregoing sketch is, and limited as to the number of facts adduced, I cannot refrain from drawing the conclusion, although not clearly proved, viz. that man both from his mental and physical structure, is able to resist sudden vicissitudes of climate better, and for a greater length of time than any of the inferior animals, yet he is only born to flourish in climates, analogous to that under which his race exists, and that any great change is injurious to the increase and to the mental and physical development of man.

The nearer the climate of the original resembles the adopted country, so much less will be the injurious effect. Thus the inhabitants of Spain suffer less from the climate of the West India islands, than the natives of Great Britain, and Mr. Boyle in his Medico historical account of the West Coast of Africa, states, that the Dutch and Swedes appear to suffer more from the climate, than the people of more southern countries.

There is a theory in medicine denominated the doctrine of *acclimatization or seasoning*, the principles of which are, that the human constitution after a certain length of time, becomes suited to any great change of food, climate or indeed any unusual mode of life. On this theory is founded the opinion that the first few years of a European's residence in the tropics are more fatal than any other period, an opinion opposed to many statistical facts, and at variance with the statements adduced in

this paper; for it must be obvious if the doctrine of seasoning were correct, the European ought to be completely fitted in the course of sixty years to resist every injurious effect of the tropics, and that their offspring should almost resemble the aboriginal races in being able to bear the heat, a result perfectly opposed to almost every fact which has been quoted.

With the exception of a few barren islands, the whole surface of the globe, at present known, is peopled by the human race. This diffusion of man from the poles to the equator must have been extremely gradual, an opinion which the examination of the sacred and profane history of the world proves. It will be found on the examination of all the ancient colonies, whether entered on for conquest, trade, dissatisfaction at home, or want of food, that the emigrants never adopted countries to settle in, possessing climates and seasons, diametrically opposed, or differing to a great extent from their father-land. No great vicissitude of climate, or sudden change of food, or mode of living, was therefore experienced, and the human race increased and multiplied on the earth. It is not necessary to go back to the early days of the world, to show an example, of the energy which exists in man to increase, if emigrants settle in climates and countries suited to their constitutions and habits. Scarcely more than two hundred years have elapsed, since the unfortunate reign of Charles the First of England caused a few British exiles to settle on the shores of the temperate parts of America; from that time they have gone on increasing by births, and emigration, to an extent which astonishes every one, who reflects on the subject; every twenty-three years and a half, the population has doubled itself, and at the census of 1840 the different divisions of the United States, contained seventeen millions of souls; contrast this increase with the languid state of any European colony, or settlement, in the torrid zone, and we at once have an example of the beneficial and injurious effect of climate on the human race.

## Article. V.

### *Remarks on the Treatment and Pathology of Delirium Tremens, as observed in the European General Hospital at Bombay, during the five years, from July* 1838, *to July* 1843. By C. Morehead, M. D.

Presented November, 1843.

During the five years over which these remarks extend, 237 patients have been under treatment for delirium tremens, being 3.1 per cent of the total hospital admissions; of these, forty one cases have terminated fatally, being 17.8 per cent of the admissions from delirium tremens, and 7.5 per cent of the aggregate deaths in the hospital.

Though 17.8 per cent is the average annual rate of mortality for the five years, it has varied considerably in different years, and very strikingly in different months. In the years 1839 and 1841, the deaths were above 20 per cent of the admissions, whereas in the year 1842, they were only 7. per cent. Throughout the five years, there is not a single fatal case of delirium tremens recorded in the months of January and February, though the admissions from the disease were respectively 3.2 and 5.3 per cent of the total hospital admissions; whereas in the months of May and October the rate of mortality from delirium tremens was above 40 per cent, though the admissions were not above 4.7 and 1.2 per cent of the aggregate hospital admissions. In the month of May also the admissions are numerically considerably above those of any other month of the year.

The data from which these statements are made, will be found with additional statistical details of a similar character in the tabular return which is annexed to this report.*

* Also in the appendix, a statement of the total admissions into the hospital for the same period.

The persons who are admitted into the General Hospital, affected with delirium tremens, generally belong to one of the following classes. 1st. Engineers and Boiler-makers connected with the Steam Flotilla Department, or the works in the Dockyard—men not long resident in India, and whose ages may range from 20 to 35. 2nd. Non-commissioned Officers and Soldiers attached to the different branches of the Military Department at the Presidency—men of various periods of service in India. 3rd. Seamen belonging to the public service or to merchant ships, who have been on shore on liberty, and have for a succession of days been dissipating in the bazaar; or seamen and others out of employ who have been lodging in taverns.

From the class of seamen however, the admissions are considerably the most numerous.

The division of delirium tremens into two species, which has been made by some* writers would seem to be correct. The 1st species, generally immediately succeeds the excitement of hard drinking without an intermediate period of abstinence from the accustomed stimulus, and is characterized by a flushed countenance, full pulse, slight tremors, a tongue coated in the centre and frequently florid at the tip, with, generally but not invariably, more or less irritability of stomach. In the 2nd species, the symptoms come on in the habitually dissipated, after the accustomed stimulus has, from some cause or other, been for a time withheld.

Of the *first species*, cases are occasionally admitted into the General Hospital, occurring, generally I think, in the class of steam Engineers, and not unfrequently terminating by convulsions unexpectedly coming on, and passing into complete coma, with rapid pulse, pungent heat of skin, and proving fatal in a few hours after the accession of the convulsions. The occurrence of symptoms of gastric irritation in cases of this form of the disease, is certainly frequent, and probably sufficiently so to justify the opinion entertained by† Dr. Stokes, that it is dependent on Gastritis. At all events, this complication requires to be specially attended to in the course of treatment.

Many of the cases do well under the use of the cold affusion frequently repeated; attention to rest and quietness; the exhibition of effervescing draughts with a few minims of tincture of opium; and the application

* Copland's Dictionary of Practical Medicine and British and Foreign Medical Review, Vol. ix. p. 475.

† British and Foreign Medical Review, Vol. ix. p. 476.

of sinapisms to the epigastrium, or a blister, if the symptoms are more urgent. A dose of calomel, vi. or vii. grains, with one grain of muriate of morphia and one of ipecacuanha, given at bed time, preceded by cold affusion to the head and hot foot bath, is frequently useful.

It is, I think, only in this species of the disease that the question of the expediency of the local detraction of blood, can, with advantage, be entertained; and probably the best guides to its successful adoption are the habit of the individual,—whether plethoric or not—the knowledge possessed of the length of time to which he has been addicted to habits of dissipation, and the stage of the attack. In young men of robust constitution, not long resident in India, and not confirmed drunkards,—it is often useful, at the commencement of the attack, to detract blood locally by cupping the nape of the neck, or leeching the temples; but, it has seemed to me, that it is only under these circumstances that the practice holds out any prospect of benefit. In regard to the general abstraction of blood, I believe, that even in these cases it is very seldom expedient, and, if adopted, should be carried into effect with very great caution.

Stimulants (wine, &c.) in this form of delirium tremens are not generally required,—but the state of the pulse and skin sometimes calls for their exhibition. When symptoms of gastric irritation are not present, (and such cases I think occasionally present themselves,) the use of tartar emetic combined with more or less opium, according to the character of the head symptoms, in the manner to be subsequently more particularly adverted to, is perfectly applicable.

But the *2nd species* of the disease is the one of greatest importance, and most frequent occurrence; the other being comparatively rare.

The division of the *2nd species* into three stages, first, I believe, suggested by * Dr. Blake, is quite in accordance with the character of the disease as observed in the General Hospital, viz. 1st, A stage of depression, characterized by tremors (in some cases excessive); by feeble pulse; sleepless nights, but no delirium; anorexia, and frequently irritability of stomach. 2nd. The stage of active delirium. The 3rd. stage, in cases which have gone on favourably, is one of lengthened sleep, followed by recovery; in cases which have progressed unfavourably, it is a state of low muttering delirium, with contracted pupils, tremulous agita-

* Edinburgh Medical and Surgical Journal for October 1823. I regret that I have not had the opportunity of consulting Dr. Blake's Practical Treatise on Delirium Tremens, published in 1830; or the 2nd Edition of 1840.

tion, feeble and rapid pulse, and generally terminating fatally by convulsions and coma, or by coma coming on without convulsions. It is to this train of symptoms, that throughout these notes, I shall apply the designation "*3rd stage.*"

*1st stage.* By treating this stage with stimulants, wine, brandy, &c. and * occasionally an opiate at bed time, preceded by cold affusion to the head,—the occurrence of the 2nd stage is sometimes prevented, and recovery takes place; or, if it is not prevented, is much lessened in severity.

In the cases in which there is irritability of stomach with slimy and florid tongue; effervescing draughts with a few minims of laudanum, sinapisms or a blister to the epigastrium, with stimulants according to the state of the skin and pulse and tremors, and a grain of muriate of morphia, with two or three grains of calomel, at bed time, with an effervescing draught, and preceded by a hot foot bath,—constitute the best mode of treatment. In the management of this stage the use of stimulants ought never to be abruptly stopped, but gradually lessened, and an adequate diet should be reverted to as soon as practicable.

*The 2nd stage, or that of active mental excitement.* It is unnecessary that I should enter into any particular description of the symptoms of this stage; they are those which most particularly characterize the disease, and they will be found accurately detailed in all the best late works on practical medicine. There are, however, certain particulars which, though noted by some observers, have not, I think, received that attention which their importance (as bearing on treatment) seems to me to require; and on these points I shall somewhat extend my remarks.

It is observed by Dr. HoegGuldberg, Physician to the Hospital at Frederickstadt, that the critical sleep occurs in the greater number of cases on the fourth day; but it does not appear whether he dates from the commencement of the first stage, or from that of the second. In all probability from the former; for, on carefully going over a great many of the diaries of cases treated in the European General Hospital, I find, that of 26 cases in which the access of the second stage and its termination, are

* I have said occasionally an opiate at bed time advisedly, because it requires to be given with discrimination; for not unfrequently the first symptoms of the 2nd stage come on after an opiate given at bed time; whether in consequence of the opiate, or because it has chanced to have been given at the period when the commencement of the 2nd stage was to be looked for in the regular course of the disease, is a question which I do not pretend to resolve. Of the fact as now stated I have no doubt.

distinctly recorded,—the average duration of this stage is 46 hours,—the shortest period being 24, and the longest 60 hours.

It is distinctly stated by Dr. Blake, that the mental irritation requires a given time to subside; and it is also the opinion of Dr. Ware of Boston, that the disease runs a certain course. From considering the cases which have passed under my own observation, I had arrived at a similar conclusion, and at a time when I was not aware that the same opinion had been entertained by previous observers.

The circumstances which guided me to this opinion, were, 1st, the frequently observed fact, that the quantity of opium which on one day failed in inducing sleep, succeeded on the following; a circumstance to be explained, either on the supposition, that the natural tendency of the symptoms was to abate, after a certain course; or that the effect of the opium was cumulative,—a conclusion which would be contrary to our experience of the action of that medicine in all other diseases. 2nd, Again, in cases treated with full opiates frequently repeated, I have several times remarked, that sleep was induced for three or four hours, but that the patient then woke up delirious as before; and some of these cases I have known to terminate fatally.

It is this feature,—I mean the circumstance of the 2nd stage running a certain course,—which it seems to me has not received its full consideration, in relation to treatment; for, if acknowledged, it may be safely affirmed, that the indication of cure is not by full doses of narcotics to force a state of sleep, but to conduct the patient through the period of delirium, by withdrawing all sources of irritation, by moderating or sustaining the circulation, and by calming the nervous excitement. Though a similar opinion is expressed by Dr. Blake in the following words; "It does not appear to me to be of any service to attempt to break the chain of morbid concatenation too abruptly, as the stage of mental irritation seems to require a given time to subside, in proportion to the stage of exhaustion, to the mode of treatment adopted, and to its previous causes." I am not aware that any subsequent writer has given to this feature of the disease that prominence, which its importance demands.

* The indications of cure, as thus stated, are, I think, best effected

* Though, as I have elsewhere remarked in this paper, figured statements as data from which alone to judge of the success of medical treatment, are open to very evident sources of fallacy,—still the fact should be recorded here that the year 1842, in which the rate of mortality from delirium tremens stood as low as 7 per cent, is that in which the mode of treatment about to be detailed, was followed most systematically and steadily.

by means of the cold affusion, and the use of tartar emetic combined with opium or other narcotic, and the exhibition of stimulants.

In regard to the *cold affusion* it may be used with excellent effect three or four times in the course of the 24 hours, — the most important, however, being that before bed time,—in all cases in which the circulation is steady, the skin not covered with perspiration, or its temperature not reduced below the natural standard ; or, in which there are not present, any of the local complications which contra-indicate the use of this remedy under ordinary circumstances. In cases in which, from the state of the pulse, there may be doubt of the propriety of the cold affusion, it frequently becomes quite admissible by preceding its use, by the exhibition of a stimulant (as brandy, &c.) ; and in the still more doubtful cases, and even in instances in which the measure may be decidedly contra-indicated, there is good effect from using cold affusion to the head, and at the same time a hot foot bath.

There is not, according to my experience, much difficulty in inducing patients to submit to this remedy ; and it is hardly necessary to add that the employment of coercive measures, to effect it, is altogether inadmissible. In considering this statement, however, it must be borne in mind, that I write of experience in a climate whose mean temperature is about 80,° and that the water used has never been artificially cooled ; and that the practice of frequent bathing is habitual to many of the patients. The first consideration is important, as bearing on the question of the temperature of the water used ; and the second, as in all probability, explaining the little difficulty which has been experienced in inducing patients to submit.

But the exhibition of *tartar emetic with opium or other narcotic*, first, I believe, introduced into practice by * Dr. Law of Dublin, and followed by † Dr. Graves, ‡ Dr. Clendinning, and others, constitutes the most successful means of controlling the symptoms of this stage of the disease. This mode of treatment has, during the last five years, been much followed in the cure of delirium tremens, in the European General Hospital at Bombay ; and there has been also, during the same period, ample opportunity of comparing the result, with that of the mode of treatment by free opiates frequently repeated.

* London Medical Gazette, for 2nd July and 30th July, 1835.

† The Dublin Journal of Medical Science for May 1836.

‡ London Medical Gazette, January 14th 1842.

Tartar emetic and opium, in proportions modified according to the symptoms, and associated with the use of the cold affusion and stimulants, is, in my judgment, a much more successful and satisfactory mode of treating the 2nd stage of delirium tremens, than the more common plan of giving free opiates uncombined, or in combination with stimulants alone, and is moreover devoid of the risk of positive injury which more or less attends the latter system of treatment.

The tartar emetic has been given by me in doses from half a grain to a grain in an ounce and a half of camphor mixture, with from 20 to 30 minims of tincture of opium or tincture of hyosciamus, repeated every hour, second, or third hour. The variations in the dose, and the intervals at which given, being dependent on the state of the circulation, the condition of the skin, and the degree of mental excitement. Though in determining these variations, there is room for the exercise of discretion, in each particular case, still, it will probably be found, that the greater number of cases are sufficiently controlled by $\frac{3}{4}$ of a grain of tartar emetic and 30 minims of tincture of opium or tincture of hyosciamus every second hour, continued till sleep is induced,—with intermissions of several hours, at times, if the sinking of the pulse or reduction of the temperature of the skin, should indicate the expediency of such a measure. The tincture of opium is, I think, the more useful; the tincture of hyosciamus having been used in the milder cases, and chiefly with the view of avoiding the constipating effect of the former. The tartar emetic, even in grain doses, thus combined and repeated every hour, very seldom causes nausea or vomiting; in fact, it has seemed to me that in the 2nd stage of delirium tremens, there is as complete a tolerance of the emetic action of the tartar emetic as is present in pneumonia; and this I have remarked, even in cases in which there had been irritability of stomach during the 1st stage,—an observation which also accords with Dr. Law's experience.

In cases treated in this manner for about 24 hours without tendency to sleep appearing, it is often very useful to intermit this medicine for a few hours before bed time; then to use the cold affusion, preceded, if the pulse and skin indicate the expediency, by a stimulant, and after the affusion, to give one dose of the antimonial with a drachm or a drachm and a half of the tincture of opium. By this means, sleep is often induced in cases in which, without this fuller opiate, it might have been postponed for several hours. It is however, I think, very generally of no avail to adopt this course within the first 24 hours of the 2nd stage.

*Stimulants*, as wine, brandy, &c. are more or less required throughout

the treatment of this stage of the disease; and their use is perfectly compatible with that of the cold affusion and the exhibition of the tartar emetic and opium. The degree to which these stimulants are required in individual cases, must vary according to what may be known of the previous history of the patient; the state of the pulse and skin at different periods, and this latter symptom ought to be the principal guide. From 6 to 8 ounces of Port wine in the 24 hours, will generally be sufficient, though the necessity of adding brandy to the extent of from 4 to 6 ounces, not unfrequently occurs; and it follows, that the cases in which there is the greatest necessity for stimulants, are those in which the utility of the tartar emetic is least apparent, and in which it is most frequently necessary to intermit its use. But cases of this nature constitute a small proportion of the number of admissions, and occur generally in those whose career of dissipation has been lengthened, and who have suffered from several former attacks of the disease.

It has been well remarked by Dr. * Budd, that in the management of this stage of delirium tremens, it is of consequence to attend to the diet of the patient with the view of encouraging any desire for solid animal food, that he may evince. This suggestion is, I believe, a very important one; and it has seemed to me, that very frequently, there is during this stage no great disinclination for food on the part of the patient, —such being rather a feature of the first stage.

The not unfrequent injurious effects of opium, too often repeated, or given in doses too large, in the treatment of the 2nd stage of delirium tremens did not escape the observation of Dr. Pearson † and Dr. Blake; and has been brought forward of late years very prominently by ‡ Dr. Wright of Baltimore and ‡ Dr. Ware of Boston. On no point of practice is my conviction more decided, than that opium in full doses requires to be exhibited in delirium tremens with very considerable caution,—much more, indeed, than is generally believed; and that it is liable, under some circumstances, to hasten on a fatal result by convulsions and coma, or to aggravate and modify the train of symptoms which characterize the 3rd stage.—The following have seemed to me the leading objections which may be urged against the treatment by opium, as frequently followed.

1st If there be good grounds for supposing that the tendency of the

* London Medical Gazette, May 13th 1843.

† Copland's Dictionary of Practical Medicine.

‡ British and Foreign Medical Review, Vol. vii. p. 268.

2nd stage of the disease, is to run a certain course and terminate in sleep, then the indication of cure is, surely, not to attempt to cut short this stage abruptly, by large doses of narcotics ; for it would be as sound practice to attempt to obviate the hot stage of an intermittent fever, or the febrile or eruptive stages of the exanthemata. (2nd). In support of the opinion that the treatment of the 2nd stage, by free opiates, may tend to interfere with its regular course, I would state that in selecting from the cases treated in the General Hospital those which illustrated the duration of * this stage, I confined myself to those in which the change from the 1st to the 2nd stage was well marked, and in which the occurrence of sleep was critical and followed by recovery ; and almost without exception, these cases have proved to be instances in which the treatment with tartar emetic and opium, and hyosciamus, cold affusion and stimulants had been used. In the cases in which the treatment by free and frequently repeated opiates had been followed, and which had also had a successful issue, I experienced a difficulty in marking distinctly the commencement and termination of the 2nd stage; because opium had very generally been given more or less freely during the 1st stage, and had plainly masked the period of transition; and again, very frequently during the course of the 2nd stage sleep was produced for some hours, but was succeeded by a recurrence of delirium, again to be checked and perhaps again to recur. It is not disputed that a full opiate given in the stage of excitement is frequently followed by sleep, but if the law as stated, be just, the probability of this issue depends on the period of the stage at which the remedy may chance to have been given ; and then it merely acts favourably in conformity with the natural tendency of the disease, and, not because there has been an accurate adaptation of the quantity given to the degree of excitement. (3rd). It has seemed to me, that in the cases treated with free opiates there is a greater tendency to pass into the 3rd stage, and I think, a greater number of cases thus treated terminate by convulsions and coma. I have not attempted by a scrutiny of the cases to offer a numerical statement in support of this opinion ; for, in all questions of medical treatment, such data are open to evident sources of fallacy,—the principal of which, perhaps is, that there are many important circumstances bearing on success which have no expression by numbers ; still, however, the opinion as stated is the result of the impression left on my mind by the cases which came under observation, strengthened by a careful review of a great many of the diaries.

* The result of which is stated page. 142.

(4th). As has already been remarked, it was the opinion of Dr. Pearson, that after a certain time it is injurious to persist in the use of opium, for the action of the medicine confuses the symptoms of the disease ; and a similar conviction is more strongly expressed by Dr. Wright of Baltimore. My suspicions on this point were excited when it was not present to my mind, that such views had been already strongly expressed, and they were caused by the following circumstances. A man under treatment for delirium tremens in the 2nd stage, took gr. i. of tartar emetic and tincture of hyosciamus ʒi. every hour for ten successive times, after which there succeeded convulsive agitation of the hands which were moved about as if in search of objects ; there was a rolling motion of the tongue about the teeth and cheeks as if in search of some object in the mouth ; the pulse was 108 of moderate strength ; there was constant incoherent low muttering, the pupils were *very much dilated.* Under the use of blisters, tartar emetic in smaller doses, with spiritus ætheris nitrici, this patient recovered. The symptoms just detailed are those of the commencement of the 3rd stage of the disease, with the exception that the pupils were much *dilated* instead of being *contracted ;* and it is hardly necessary to remark that henbane in poisonous doses *dilates* the pupils, and opium *contracts* them.

The mode of exhibiting opium to which these remarks are intended to apply is, not the unusually large doses which would seem to have been recommended by some American Practitioners, but (1st) the use of tincture of opium in doses of ʒi. or ʒiss. with stimulants, given every hour or every two hours for many successive doses. (2nd). The exhibition of from a ʒiss to ʒiii of tincture of opium at bed time, followed by a half dose every hour or second hour for two, three or more times. 3rd gr. iss. doses of muriate of morphia with a few grains of blue pill at bed time, repeated every second hour in grain doses for two, three or more times, if required. The first mode, I have witnessed, the 2nd and 3rd I have frequently practised, using at the same time the cold affusion.

Before proceeding to consider the symptoms characteristic of the *3rd stage* of the disease, there are signs which mark as it were the approaching transition, in unfavourable cases, of the 2nd into the 3rd stage ; and which as bearing on practice, it has seemed to me of much consequence carefully to note. After the 2nd stage has gone on for some time and sleep has not been induced, the pulse begins to increase in frequency, rising above 100 and becoming more compressible ; the skin is damp ; the expression of countenance becomes vacant, and the pupils

begin to be contracted; the tremors increase and assume more the character of subsultus tendinum than in the earlier period of the disease, and the patient catches at objects, not so much apparently, from fancying them present when not so, as from miscalculating the distances of objects really before him.

On the occurrence of these symptoms, danger impends either from the sudden access of convulsion with succeeding coma and death, or the passing of the disease into the 3rd stage, characterized by still increased frequency, (120) and feebleness of pulse, constant agitation, low muttering delirium, contracted pupils, rolling of the tongue within the lips and cheeks as if in search of objects in the mouth,—passing gradually into coma and terminating fatally in a few hours. On the occurrence of the symptoms described above as characterizing the transition of one stage into the other, it has appeared to me, that all narcotics should be completely intermitted; the head should be shaved, if such measure has not been already adopted at an earlier stage of the disease; a blister should be applied to the nucha; the hot foot bath should be used, and if the scalp be hot, cold cloths should be applied; camphor mixture should be exhibited every second hour either with a small portion of tartar emetic or spiritus ætheris nitrici, according to the state of the pulse and skin; wine should also be given; and the importance of mild nourishment, such as beef tea and chicken soup, ought not to be lost sight of. These means if adopted at the proper time and assiduously followed, are not unfrequently successful,—the patient falling asleep and awaking comparatively well. It is under these particular circumstances and also at times earlier in the disease, while yet *all* these conditions are not present, that the use of a blister to the nape of the neck is of very great utility. This is a point of practice which, as far I know, has not been estimated according to its importance; for it is generally stated, that the application of blisters, ought to be confined to the 1st stage of the disease; a remark in all probability correct as regards their application to the epigastrium, but not, in my experience, as regards their application to the nape of the neck or to the head.

In the course of these observations, I have anticipated the description of the symptoms indicating the 3rd stage, but it remains that a few words be said of its treatment. Supposing that the course above recommended has been gone through, a blister should now be applied to the scalp, camphor mixture ℥iss. with spirit æther. nit. ℥ss. should be given every second hour with wine and light nourishment. Under this treatment and

in instances in which the symptoms of the 3rd stage were fully formed, I have known recoveries to take place; but in these cases of recovery there is frequently room for suspicion that the symptoms have, to a certain extent been caused by the free exhibition of narcotics;—and the fact of recovery from a combination of symptoms which resulting in the natural course of disease, are almost, if not always, invariably fatal, is an additional argument, it seems to me, in support of the opinion that the too free use of narcotics complicates and modifies the symptoms of the 3rd stage.

It has been stated with much justice, I think, by Dr. Blake that when the pulse rises above 100, there is then room for apprehension. This is quite in accordance with my experience, care however being taken not to mistake a frequency of pulse caused by muscular exertions which the patient in his excitement may have been just undergoing,—for that frequency which is permanent, and which takes place when the disease is progressing unfavourably.

*General remarks on treatment, blood-letting, general and local; purgatives; emetics, &c.*

I have not thought it necessary to make any particular remarks on the use of general or local blood-letting in the treatment of delirium tremens, for with the exception of local depletion, in a few cases of the 1st species, I believe that all are agreed in considering such measures perfectly inadmissible. It is not often, indeed, (so rarely is it had recourse to) that there exists the opportunity of witnessing positive injury from general or local blood-letting in the 2nd species of the disease. Such opportunity does however occasionally occur, when it may have been thought necessary in consequence of the complication of local inflammatory disease, *e. g.* dysentery, to apply leeches; and I believe it may be very safely affirmed, that such measure is never adopted without a positive aggravation of the characteristic symptoms of delirium tremens.

In regard to *laxatives* or *purgatives* I have never used them in the 2nd species of delirium tremens, except with the object of removing existing constipation. Given with this view they are of course frequently required, but further than this, their exhibition does not appear to me to constitute any part of the treatment; and the causing of free purging in this form of the disease I can readily conceive to be frequently injurious. I am aware that in stating these opinions I am opposed to several very excellent writers;* but it must be recollected that I write of the disease

* Copland's Dictionary of Practical Medicine.

as observed in a climate in which affections of the bowels are common and easily excited; and in none of the diseases of which, according to my experience, is it admissible to use purgatives with that freedom which is often perfectly safe (and perhaps necessary) in the management of the diseases of extra-tropical countries.

In regard to *emetics* they may occasionally be useful in cases in the first stage, when the tongue is coated and white, and in which there are not present symptoms of gastric irritation. Cases of this nature are however rare, and consequently the utility of emetics in the treatment of delirium tremens is very limited.

There are other points of general management on which I have not thought it necessary to dwell, because all are agreed in regard to their importance, *e. g.* 1. The advantage of secluding the patient during the stage of excitement in a quiet and partially darkened room, carefully protected with barred windows and under a trustworthy guard. (2). The injurious effect of strait jackets or bonds of any kind, and the extreme rarity of their necessity when common management and tact have been observed. (3). The necessity of guarding against the well marked suicidal tendency which is frequently present.

*Pathology of the Disease.* The cases* narrated agree well with the opinion generally stated, that the appearances found after death are frequently trifling and not adequate to explain the phenomena of the disease. 1st. There is frequently more or less serous effusion between the arachnoid membrane and the pia-mater, into the ventricles, or at the base of the skull. (2nd). There is observed a state of dotted redness at the cardiac end of the mucous lining of the stomach, very frequently without alteration of the texture of the tunic, sometimes associated with a mammillated state of the mucous coat of the pyloric end or body of the stomach; but admitting the frequency of this appearance, it does not, I think, support the view originating, I believe, with Broussais and subsequently supported by Dr. † Hannay of Glasgow and others, that delirium tremens is caused by the gastritis. On the contrary, this appearance of the mucous coat of a stomach exposed to the habitual action of the strong stimulus of alcohol, is what ought to be expected, and without doubt exists in individuals with these habits, and at a time when there are not symptoms of delirium tremens present. The circumstances in the pathology of delirium tremens, which it is of most importance to regard as bearing on the probable unfavourable result, are the facts of the patient having frequent-

* See Page 49 and sequent. † London Medical Gazette, March 3, 1838

ly suffered from previous attacks of the disease, or of some local complication being present during the attack,—dysentery being the one which probably will be found to occur most frequently in the delirium tremens as observed in Bombay.

*Tabular statement of admissions and deaths from Delirium Tremens in the European General Hospital at Bombay for the five years from July* 1838 *to July* 1843, *with percentage of deaths on admissions; of admissions on total Hospital admissions; of deaths on total Hospital deaths, for the same period.*

| | * 1838. | | 1839. | | 1840. | | 1841. | | 1842. | | * 1843. | | Total. | | Monthly average of the five years. | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Admissions. | Deaths. | Admissions. | Deaths. | Admissions. | Deaths. | Admissions. | Deaths. | Admissions. | Deaths. | Admissions. | Deaths. | Admissions. | Deaths. | Deaths per-cent of admission. | Admissions per-cent of total Hospital admissions. | Deaths per-cent of total Hospital deaths. | |
| January | " | " | 3 | " | " | " | 5 | " | 6 | " | 4 | " | 18 | " | " | 3.2 | " | |
| February | " | " | 1 | " | 3 | " | 11 | " | 4 | " | 3 | " | 22 | " | " | 5.3 | " | |
| March | " | " | 1 | 1 | " | " | 4 | 1 | 3 | " | 3 | " | 11 | 2 | 18.1 | 2.1 | 6 | |
| April | " | " | " | " | 9 | " | 8 | 1 | 7 | " | 2 | " | 26 | 1 | 3.8 | 4.4 | 2.4 | |
| May | " | " | 6 | 5 | 6 | 2 | 11 | 8 | 9 | 1 | 10 | 2 | 42 | 18 | 42.8 | 4.7 | 22.4 | |
| June | " | " | 2 | " | 1 | 1 | 3 | " | 14 | " | 4 | 1 | 24 | 2 | 8.3 | 3.1 | 3.9 | |
| July | 3 | 2 | 1 | " | 4 | " | 3 | " | 6 | " | " | " | 17 | 2 | 11.7 | 2.3 | 5.4 | |
| August | " | 1 | 3 | " | 1 | " | 3 | " | 5 | " | " | " | 12 | 1 | 8.3 | 1.9 | 2.8 | |
| September | " | " | 4 | 1 | 5 | 1 | 6 | 3 | 3 | 1 | " | " | 18 | 6 | 33.3 | 3.3 | 11.5 | |
| October | 1 | " | 3 | " | 2 | 1 | 1 | 1 | 2 | 2 | " | " | 9 | 4 | 44.4 | 1.2 | 14.8 | |
| November | 1 | " | 5 | " | 1 | " | 2 | " | 7 | 1 | " | " | 16 | 1 | 6.2 | 2.3 | 2.1 | |
| December | 4 | 1 | 3 | " | 5 | 2 | 5 | 1 | 5 | " | " | " | 22 | 4 | 18.1 | 3.5 | 6 | |
| Total | 9 | 4 | 32 | 7 | 37 | 7 | 62 | 15 | 71 | 5 | 26 | 3 | 237 | 41 | 17.8 | 3.1 | 7.5 | annual average of five years. |
| Deaths per-cent of annual admissions of Delirium Tremens. | 33.3 | | 21.8 | | 18.9 | | 24.1 | | 7 | | 11.5* | | | | | | | |
| Admissions per-cent of total annual Hospital admissions. | 2.1 | | 2.3 | | 2.7 | | 4.1 | | 3.4 | | 2.7 | | | | | | | |
| Deaths per-cent of total annual Hospital deaths. | 13.8 | | 7.6 | | 6.6 | | 13.5 | | 3.2 | | 6. | | | | | | | |

* These columns viz. for 1838 and 1843 it will be seen are calculated from the admissions and deaths of the half year only, and, in drawing any general annual average, should be left out of the calculation.

## Article VI.

*Annual Report of the Sick in Hospital of the* *10*th Regiment N. I. Stationed at Aden, for* 1842. By J. Scott, Esq. Surgeon.

Presented by the Medical Board, May, 1843.

There has been a gradual and very marked improvement in the condition of the 10th Regiment during the latter part of the past year, as compared with that which it had previously exhibited since its arrival at Aden.

I received charge of the Regiment on the 12th January 1842; and, in a letter of the 30th March, I reported to the Superintending Surgeon

* *Stationed at Aden.*

| | |
|---|---|
| Strength | 1131 |
| Included in the Returns on the 31st December | 662 |
| Absent on command beyond the Division or on leave | 469 |
| Total | 1131 |

*Number of Sick.*

| | |
|---|---|
| Remained 31st December 1841 | 107 |
| Admitted in 1842 | 573 |
| Discharged | 641 |
| Died in Hospital | 19 |
| Remaining 31st December 1842 | 20 |
| Average daily number of Sick for the year | $36\frac{63}{365}$ |
| Average number of Convalescents | $\frac{256}{365}$ |
| Died without receiving medical treatment | 2 |

that I anticipated a further stay at Aden would have very serious effects on the Regiment; and I founded my opinion on these facts, that the number admitted into hospital in 1841 was 1189, and the number of deaths in the same year 41, that the number of sick during the months of January, February, and March 1842, averaged 84, 82, and 70, while many of those in hospital had been long confined with scorbutic and rheumatic affections, and several cases occurred of that chronic peritonitis which has invariably proved fatal here; besides which, a great number, nearly 300, had already been sent to Bombay, at various times, on account of sickness.

The result, however, has been fortunately otherwise than I anticipated; the numbers in hospital have gradually declined, as the following statement of the monthly averages will show.

| | January. | February. | March. | April. | May. | June. | July. | August. | September. | October. | November. | December. | The year. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1841 | 57 | 53 | 57 | 71 | 32 | 41 | 66 | 60 | 87 | 99 | 118 | 108 | 71 |
| 1842 | 83 | 82 | 70 | 35 | 23 | 22 | 24 | 23 | 20 | 23 | 16 | 13 | 36 |

The number of deaths at Aden in 1841 were 41; in 1842 they were 21. The number sent sick to Bombay for the benefit of change in the former year were 82, in the latter 41; of these 38 died in 1841, and 17 in 1842. In 1840, 52 died in Aden, and 207 were sent sick to Bombay.

*Changes since* 31st *December* 1841.

| | |
|---|---|
| Recruits joined | 8 |
| Discharged from the Service on account of diseases | |
| Discharged from the Service on account of other causes | 5 |
| Invalided | 4 |
| Pensioned | 21 |

## *Supplementary Table to the Annual Report for* 1842

| Diseases. | Number admitted during the year. | Discharged. | Died. | Remaining. | Average age of Patients. | Average number of days under treatment. |
|---|---|---|---|---|---|---|
| Fever | 193 | 185 | 1 | 7 | 30 | 9 |
| Hepatitis | 4 | 2 | 1 | 1 | 22 | 34 |
| Dysentery | 7 | 7 | " | " | 29 | 9 |
| Cholera | " | " | " | " | " | " |
| Diarrhœa | 16 | 16 | " | " | 26 | 5 |

It is a matter of much interest and importance to define what are the circumstances which have produced so favourable a change in the state of the Regiment, and I will here endeavour to point out those to which I am inclined to attribute it.

It may in the first place be presumed, I think, that the climate had not been the sole, or even the chief cause of the sickness which the Regiment formerly experienced, since, had it been so, that sickness, instead of diminishing, would have increased as its influence continued.

The average strength of the corps at Head Quarters had been somewhat less in the past than in the previous year, viz. 720 in the former and 820 in the latter, in consequence of casualties and the removal of sick to Bombay. But though this might lower the number of sick in hospital, it could only do so to a small extent.

During the first two years of the stay of the corps at this station, at which they arrived, in greater part, in January 1840, the duty was much more harassing than it has been of late, from the disturbed state of the tribes in the interior, and the frequent alarms of night attacks which arose therefrom, obliging the men to be frequently under arms, and to march to distant points of defence during the night. Nothing of this kind has occurred during the past year, and the men have had no more than ordinary garrison duty to perform.

The state of the country rendered the supply of vegetables and other articles of food from the interior, especially during the first year, very scarce and precarious; during the past year the supply has received no interruption, and has been pretty ample of such things as the country affords.

An improvement which I suggested has been made in the tents occupied by the sepoys on out-post duty at the Turkish wall, in the erection of platforms within them, a few inches above the ground, on which the men rest instead of on the sandy soil, which had always some dampness in it from saline impregnations.

The difficulty of procuring provisions, and the consequent high price which they bore, engendered among the men, it is said, a habit of saving their money, which they retained, when those causes no longer existed, and carried to an injurious extent; this practice I believe is now diminished, and the men moreover appear to have much less dislike to the station than they formerly had.

All these circumstances have had, I conceive, an influence in improving

the health of the Regiment, but another, and I am inclined to think the chief cause, has been a change in its position.

The ground on which it was formerly pitched was in many parts damp and impregnated with saline matters, while in the neighbourhood of the huts, at certain high tides, the sea water percolated through the soil and stood in pools on its surface.

As this was the situation fixed upon for the permanent station of a Native Corps, in order that the pendals to be erected for it might be proceeded with, the Regiment in May last was moved to the northern part of the valley. There the ground is higher and perfectly dry, and is sheltered from the winds by the proximity of the hills, more especially by those to the westward, from the violent hot and dry winds which prevail during the hot season from June to October.

I am the more inclined to regard this change of position as a chief cause of the improved state of the 10th Regiment, from this, that it is in the same situation on ground adjoining that now occupied by the 10th Regiment, the Wing of the 16th Regiment has been located ever since it came to Aden, and its immunity from sickness, as compared with the former Regiment, has always been remarkable.

Having this opinion I am inclined to regard it as a matter of regret that the situation the Native Troops now occupied, was not fixed upon for the permanent lines to be made for them. At the same time, there is reason to hope that the improvement which has been made in the ground on which they are to be erected, it being levelled and filled up in some places, 14 or 15 feet, together with the construction of substantial pendals now in progress, may diminish what prejudicial influence the situation formerly had.

In conclusion on this subject I would observe that, from the state of the 16th Regiment since they have been at Aden, and the improvement that has lately taken place in the condition of the 10th, there appear to me to be sufficient grounds for believing, that a Regiment which may come hereafter to this station, if properly housed and sheltered, and enabled and induced to consume a sufficiency of wholesome and nourishing food, may enjoy as good health as in most stations in India.

At the same time the facility of sending men to and from Bombay by the steam packets, and thereby affording to particular cases the benefit of a temporary change of climate, is an advantage to the station of great importance that should always be held available.

I subjoin an abstract of the Register of the Thermometer kept in hospital during the year.

*Abstract of the Register of the Thermometer during the year* 1842.

| | Temperature. | | | | Variation. | | | |
|---|---|---|---|---|---|---|---|---|
| | Mean at 6 A. M. | Mean at 3 P. M. | Maximum at 3 P. M. | Minimum at 6 A. M. | Maximun in one day. | Minimum in one day. | Mean daily. | Maximum of the month. |
| January | 74 | 80 | 82 | 75 | 6 | 2 | 3.6 | 7 |
| February | 76 | 82 | 85 | 72 | 13 | 4 | 6.0 | 13 |
| March | 78 | 84 | 86 | 74 | 9 | 3 | 5.9 | 12 |
| April | 81 | 86 | 88 | 80 | 7 | 1 | 4.0 | 8 |
| May | 83 | 90 | 99 | 77 | 14 | 4 | 7.3 | 26 |
| June | 86 | 95 | 99 | 83 | 16 | 4 | 8.4 | 16 |
| July | 87 | 94 | 98 | 85 | 13 | 5 | 7.2 | 13 |
| August | 84 | 93 | 99 | 80 | 16 | 4 | 7.8 | 19 |
| September | 83 | 90 | 95 | 74 | 13 | 2 | 7.0 | 21 |
| October | 81 | 87 | 93 | 74 | 12 | 3 | 6.1 | 19 |
| November | 77 | 83 | 89 | 74 | 11 | 3 | 6.1 | 15 |
| December | 77 | 81 | 83 | 74 | 6 | 0 | 3.7 | 9 |
| For the year | 80 | 87 | 99 | 72 | 16 | 0 | 6.09 | year 27 |

Few of the diseases that have prevailed in the 10th Regiment during the past year require particular notice.

*Fevers* have not been frequent, and those which have occurred have been generally of a mild intermittent type, and easily subdued.

*Scurvy* has been much less prevalent than during the former part of the Regiment's stay here ; indeed the diminution of a scorbutic tendency throughout the corps forms perhaps the chief part of that amendment which has taken place in it generally.

*Rheumatic affections* have been frequent and obstinate, more especially when combined with scurvy.

There have not occurred in the Regiment, during the period under review, any of those formidable ulcers which have obtained the title of " Aden Ulcers ;" but even small sores caused by slight bruises have always been very long of healing, and sometimes very painful. For these I have found the best local remedies to be the red precipitate ointment, black wash, a solution of sulphate of copper, and, when the edges become elevated and the whole sore indolent, in which state none of the above produce any effect, pressure made by a copper coin bandaged over them.

I have seen some very bad ulcers among the poor and most destitute of the inhabitants of the town, destroying, by sloughing, large portions of the soft parts of the feet and limbs, even to the separation of a foot at the ankle joint. In these, local remedies have little effect, unless the

system can be improved by constitutional remedies, above all by good food,—their character depending on a general state of the body engendered by bad diet, want of clothing, and every other concomitant of miserable living. On that account, I have never attempted amputation as a remedy, expecting that the wound in the stump would assume the same character as the original disease, and I believe it has never succeeded with those who have tried it.

One disease deserves a more particular notice, that which I have denominated *chronic peritonitis*, as deriving an unfortunate importance both from its frequency at this station and its very fatal character.

This disease as I first saw it was in the form of dropsy. On joining the 10th Regiment in January last, I found several cases in hospital, most of which had been there a considerable time and had decided abdominal effusion. I was told that the disease had been of frequent occurrence in the Regiment, and that it had always in longer or shorter time proved fatal.

As I first saw it, there was in all the cases, as I have said, an evident effusion into the abdomen, attended with pain of that region in different situations, bad appetite with distressing distension of the abdomen after eating any thing, and the urine very high coloured.

In some, more especially in cases of long standing, there was hardness and fulness in the upper part of the abdomen, either in the right or left hypochondrium or in the epigastrium—most generally in the latter.

Subsequently, cases came into hospital in which there was no effusion, but which the other symptoms and the progress of the malady showed to be the same complaint in a more incipient state.

As I have now seen it in 29 cases, the following appear to me to be the characters presented by the disease, in its commencement and in its progress.

A man complains of pain in some part of the abdomen, generally about the umbilicus, which is increased by pressure but never amounts to great tenderness.

This pain very frequently is accompanied with a pricking or burning sensation over the fore part of the abdomen, and in some cases these sensations are the only kind of pain complained of. There is invariably a want of appetite and a distension of the abdomen after eating any, the lightest and most scanty meal, which becomes the more distressing as the disease advances; very often, at a later period, any thing that is taken into the stomach is immediately rejected.

The urine is generally scanty, often scalding, and almost invariably of a very dark colour ; I have seen few cases in which this symptom did not exist at first, and in these it came on afterwards.

Sometimes the patients state that they have been so affected for a considerable time, several weeks, indeed the symptoms have so little urgency in their character that they are frequently borne with, until the loss of appetite becomes so complete as to induce the patient to seek relief.

Other symptoms may be combined with those above stated, according to the degree in which the different viscera become affected by the disease ; thus in many the eyes are tinged yellow, and in some the liver can be felt some distance below the edges of the ribs shewing that this viscus is implicated.

There are no febrile symptoms, the pulse is little if at all affected, either at the commencement or during the progress of the complaint, until the failure of the powers of the system has its influence on it. The bowels are generally regular, though from the small quantity of food used but little feculent matter is passed.

In one or two cases only have I seen anasarcous symptoms in the face and limbs. The urine, in those cases in which I have tried it, was not coagulable by heat.

During the progress of the disease little change takes place in the symptoms until the appearance of effusion, the period for which is very various. Some men do not come into hospital until this has commenced, while of those who seek relief early, it appears in some in a few days and the disease ends fatally within a month from its commencement, but others continue to suffer from all the other symptoms for several weeks without any signs of effusion, and several have been sent to Bombay for the benefit of change without any appearance of it.

Doubts might be entertained whether in these the complaint was of the same serious nature, the symptoms having so little of a serious character, only a pricking pain in the abdomen, with loss of appetite and high coloured urine ; but the exact similarity seen between these and others, until in the latter, effusion commenced, showed clearly that the difference existed only in the amount of progress which the disease had made and that the former if permitted, would proceed to the same result.

I may here mention, that it was this circumstance, the existence for some time of marked symptoms of disease without effusion, that led me to adopt another name than that of "ascites" which had been applied to previous cases.

As I have said the disease may be complicated with a variety of symptoms, but it appears that those which are invariable, and which may therefore be regarded as diagnostic of the complaint, are pain in some, generally the fore and middle part of the abdomen, a want of appetite with distension after eating, and high coloured urine. I have seen no case in which these symptoms were combined that did not prove to be one of the disease I am considering.

From the obstacles arising with natives I have only had opportunities of making post mortem examinations in three cases. In all of these the liver was disorganized, hard and granulated in texture, and of a greenish straw colour; the spleen in each was healthy.

The peritoneum, in all, was of an opaque white, and in two there were extensive deposits of coagulable lymph among the intestines, and in all three the coats of the stomach were thickened, with appearances of inflammation extending over their mucous coats. No appearance of disease was seen in the kidneys.

From the above description, it will appear, that the disease is exceedingly insidious; an incurable complaint being often established before it is complained of, and the symptoms even then seeming to possess no great urgency, till experience has shown to what they may lead.

It appears certainly to be almost identical, if not entirely so, with what is called Idiopathic Ascites, and the cases of the disease which occurred previous to my taking charge of the 10th Regiment were designated as Ascites. But although the effusion is a very marked and palpable symptom, and as far as I have seen, an invariable one before the disease comes to its fatal termination, yet as there are in some cases the previous symptoms existing a considerable time, yielding to remedies or at least checked by them, without the appearance of effusion, I have thought that the disease required a designation applicable to its early state; and as I believe from the symptoms during life as well as the post mortem examinations I have been able to make, that it is primarily and essentially a disease of the peritoneum, I have called it Peritonitis.

The disease differs much however from the acute inflammation of that membrane, nor does it resemble the chronic form which follows that; it may perhaps therefore be considered a subacute inflammation, its peculiar character depending on a debilitated state of the constitution.

It appears to me that the disease commences in the external peritoneum, extending into the processes of that membrance which invest the va-

rious viscera, and exerting in these an unhealthy and disorganizing influence by which their functions are deranged.

The pain which is first complained of is generally in the umbilical region, occasionally in the epigastrium.

As the disease proceeds, the loss of appetite and the distension which food produces, indicate that the stomach has become implicated and that its powers are diminished, and the same state I have thought to be evinced by the little effect produced by some medicines. The jaundiced state of the eyes shews a derangement in the functions of the liver, and in some protracted cases this organ becomes much enlarged, forming hard tumefactions that extend from 2 to 3 inches below the edge of the ribs.

That the kidneys are affected, at least functionally, is evidenced by the state of the urine, but no pain is complained of in their region.

The following account taken from the "Cyclopædia of Practical Medicine" seems to refer to a similar disease.

"The primitive form (of Chronic Peritonitis) may commence in a slow and almost insensible manner, without presenting any very obvious symptom. There may not be abdominal pain at its commencement or during its course, and it may only exhibit the appearance of simple Ascites; in many cases we cannot ascertain with any certainty its presence during life, but when it is more open in its characters, they are identical with the consecutive form, the symptoms of which vary considerably in the early stages. It is in general attended with some abdominal pain which is mostly deep, not very acute, and rarely permanent; in many cases the patient only complains of pain when his abdomen is pressed either by the hand or the action of the surrounding muscles, or on a sudden shock of the body. There is occasional vomiting and more or less distension of the abdomen, which sometimes becomes tympanitic, and in some cases indurated spots can be felt which are tender to the touch. Emaciation, irregular bowels, either constipation or diarrhœa or the one alternating with the other, increasing distension of the abdomen, and inability to bear even the pressure of the ordinary dress, if at all tight, various dyspeptic symptoms, and general debility, mark the progress of the disease.

"The alvine evacuations are sometimes of a pale colour and peculiar fœtor, in other instances of a dark appearance, and sometimes nearly natural."

* * * * * *

"In some patients the appetite is often preserved, and the di-

gestion is but little deranged, in which cases we may conclude that the peritoneum reflected over the stomach is not very deeply involved in the disease."

* * * * * *

"The general phenomena are very obscure: the pulse is often natural except towards evening when it becomes quick.

"In some forms of the disease the abdomen becomes augmented in volume, yields a dull sound on percussion on a part or the whole of its surface, and occasionally presents the sense of fluctuation more or less obscure.

"With more or less of these symptoms the disease advances slowly, and sometimes remains stationary for several months, and even may in some cases present some temporary amendment; but it generally terminates fatally either by the supervention of acute peritonitis or enteritis; or the patient sinks from exhaustion, the result of long continued irritation or diarrhœa. In some instances ascites precedes the fatal termination, or purulent effusion into the abdominal cavity takes place. * * *."

In the above description, while there are some symptoms mentioned which have not occurred in the cases I have described, there appears enough of coincidence to shew that a similar disease is alluded to and the same view taken of its nature as I have adopted.

Of the causes of the disease, predisposing or proximate, I am unable to give any definite opinion; as I have said it is most insidious in its origin and earliest stage, and generally has made some progress before the patient feels that he is unwell. I am therefore inclined to think that exciting causes may be left out of consideration, and that if any circumstances could be classed as such, they would be what in other cases might produce fever, rheumatism or similar affections, the different results depending on some particular state of the constitution which may be regarded as the primary or predisposing cause.

This state of constitution must have its origin in the circumstances attending the residence of the natives at this place.

From the want of vegetation the climate of Aden is comparatively a dry one, tempered by its almost insular situation; to Europeans it has proved very healthy, but the native troops, and more especially the 10th Regiment have suffered much during the three years they have been here.

This effect however is perhaps not attributable to climate alone, but to it in conjunction with other unfavourable circumstances depending on the political state of the station. The native troops have never had

proper accommodation, they have been in huts, and from various causes have been moved several times; for a considerable period, I am told, their situation was in low ground, where the infiltration from the sea through a sandy soil kept it constantly damp with saline impregnations. For a considerable time the frequent reports of intended attacks by the Arabs rendered the duty harassing and that, too, generally in the hottest season; and above all, the same unsettled state of matters kept the communication with the interior closed at various times, and thereby totally excluded a supply of vegetable food. From these causes, fever, scurvy, and rheumatism, have greatly affected the Regiment, — scurvy, very generally complicating the attacks of the others.

As the disease in question has appeared under these circumstances, it might be supposed that its character depended on a scorbutic taint, but it is not accompanied with the ordinary symptoms of scurvy; and that it does not partake of that state I would argue from the fact that the system is with difficulty brought under the influence of mercury which generally produces a powerful and pernicious effect in scurvy.

All therefore that I can say of the cause of this complaint, is, that it seems to depend on some impaired condition of the system, and to be a disease of debility. Perhaps what excites rheumatic pains in the muscles and joints of one man, fixes on the peritoneum in another and creates this complaint. It has been most prevalent in the commencement of the cold season.

It has been most frequent I believe in the 10th Regiment, but has also occurred in the 16th Regiment and the Golundauze, but has never appeared in Europeans.

In regard to the prognosis of the disease, all attempts to cure it here have proved so unsuccessful that I can say little on the subject. Wherever effusion had attained any extent, the disease has proved fatal. In a few cases, where relief was sought early, the disease was checked and effusion apparently prevented for a time; all such cases were sent to Bombay in hopes that a change of climate might have a beneficial influence and assist the cure; a few lives may thus have been saved, but the following statement, which contains the last information obtained regarding them, will shew that these must be few, of 29 cases that have been in hospital in 1842, one returned to duty, nine died, and nineteen were sent to Bombay; of these seven have since died, and of the result of the others I have not yet obtained any particular information.

Of 24 cases in 1841, six died, seven were sent to Bombay, six were

discharged to duty, and five remained in hospital. Of the seven sent to Bombay, four died; of those discharged, one relapsed and was sent to Bombay in 1842, the remainder were only two or four days in hospital,—it is therefore probable that the disease was mistaken, or perhaps it was feigned in order to be sent to Bombay.

In regard to treatment, from what has been already said, it will not be expected that I can say any thing satisfactory on this point. The cases I first saw having advanced to the state of ascites, diuretics of various kinds were tried, digitalis, squills, and blue pill, in combination, the salines, iodine, — but no benefit was derived from them, and indeed the urine was seldom found to be at all affected by them.

In those cases which I afterwards saw previous to effusion, I used cupping, leeches, blisters and sometimes turpentine fomentations, repeated according to circumstances, and attempted to affect the system with mercury, giving calomel in doses of 4 and 5 grains 3 times a day combined with 1 grain of opium; but in very few cases did its influence appear in the mouth, even though given in this way for twelve or fourteen days.

Sudorifics were sometimes administered and diuretics were persevered in after effusion had commenced. Tonics of various kinds were tried at different stages of the complaint, but never seemed to be of service.

In some cases opium was given alone, $1\frac{1}{2}$ grain three times a day, previous to the appearace of effusion, and in one or two seemed to have a beneficial effect.

Paracentesis has been practised in a few cases by myself and others, to relieve the oppression which the extent of the effusion caused, but seemed rather to accelerate than retard the termination.

The medicine which has given most hope of success is colchicum, used after depletion and calomel.

Partly from not seeing the disease at first till it was far advanced and partly from the impression of its depending on a debilitated state of the system, I did not at first try general blood letting. In those cases which have appeared lately however, where the disease had not advanced beyond its first stage, I have commenced the treatment with a bleeding to fourteen or sixteen ounces, following it by the application of leeches, repeated according to circumstances, and then by blisters; while calomel was given in doses of 4 or 5 grains combined with one grain of opium three times a day from the commencement.

When by these means the pain and other symptoms have been subdued

or abated, I have given the vin. colchici half a drachm three or sometimes four times a day, and it has appeared to me in some cases with good effect. I was induced to try this remedy as well from the idea that the disease might be akin in its nature to rheumatism, as from its being recommended by some as a sedative in inflammatory disease generally. But as I have always taken the first opportunity to send those who had or were threatened with the complaint to Bombay, I cannot say more of even this treatment, than that it seems to have checked the disease and allowed this last resource to be tried.

Aden, 1st January, 1843.

## Article VII.

### *Example of the beneficial influence of change of climate, on the health of Europeans in India.* By Arthur S. Thomson, M. D. Assistant Surgeon, 14th Light Dragoons.

Presented, October 1843.

"*What inquiry can be so useful as that which hath for its object the saving of the lives of men. The prevention of diseases cannot consist in the use of medicines.*" "Sir John Pringle."

When it is considered that the Bengal Civil Servants die, at the rate of about two per cent. annually, * that the commissioned officers of the Indian Army suffer about the same loss by death, † and that the European soldiers die at the rate of about four per cent per annum, we are unavoidably forced to the conclusion, that the soldier is exposed to other causes of disease, than simply the tropical climate.

Facts like the above, and others might be quoted, which demonstrate beyond doubt, that the mortality among soldiers in the time of peace, might be much reduced, by ascertaining and endeavouring to avoid the causes of disease. Inquiry on this subject is, however, too often checked from a strong conviction, that intemperance is the root of all the evil. It certainly must be admitted that intemperance is a fertile, but it is not the sole cause of the excess of the mortality among soldiers; and granting it even were, means can surely be taken to lessen the sickness which it produces, either by change of climate or other arrangements.

* Mr. Prinsep Secretary to the Bengal Government, 46 years observation.

† See the mortality among officers during a period of twenty years as given by Mr. Curnin in his proposal to establish a retiring fund in the Indian Army; also papers by Major Tulloch in the United Service Journal.

It is therefore with no other object than that of endeavouring to promote inquiry, so that the sickness of even one man might be prevented, that I intrude the following remarks, for in the words of Lord Bacon, "I hold every man a debtor to his profession, from the which, as men of course doe seeke to receive countenance and profit, so ought they of duty to endeavour themselves, by way of amends, to be a help thereunto."

*Organic diseases supposed to be injured by a certain change of climate.* It has been laid down by those who have examined the effect of climate on invalids and convalescents, that the transference of men, having a tendency to organic abdominal disease, from a warm, moist and equable climate, such as Bombay, to a cold, elevated, dry and variable climate, such as Poona, is not to be recommended.*

This supposed injurious effect of climate, is, I think, more established on physiological reasoning than on practical observation by statistics, at least, it is opposed to the following practical result, which is drawn however from limited materials for observation, and therefore it is to be received with caution.

*Instance of the benefit of change of climate in men suffering under a disposition to organic disease.*

A wing of H. M. 17th Regiment, 380 strong, garrisoned Bombay during the rains of 1840, and were stationed for five months in the Town Barracks which are in the interior of the fort: during the seven months the wing was at Bombay, at most, two cases of disease, chiefly fever (which was slight and of which only one or two men died) occurred, and during the fever, hepatic and other complications were observed.

On the 28th November 1840, nearly 300 of the men (of whom seventy were sick) left Bombay for Poona, and the remainder of the wing, between sixty and seventy men, were left to do duty in Colaba, Bombay. On the march to Poona, and two or three days after their arrival there, hepatic and dysenteric cases of the most inveterate nature were admitted into hospital, and many proved fatal, but these admissions I attribute entirely to the climate of Bombay, as some days before leaving it, similar cases were coming into hospital. I will therefore take the

* In the first No. of the Transactions of the Society, there is a paper on this subject; also in some of Dr. Hunter's papers; and in a late number of the Madras Medical Journal.

deaths of those men admitted ten days after the arrival of the wing at Poona, as a test of the injurious or beneficial influence of the change of climate.

On referring to the Registers, I found, that from the 14th of December 1840, until the 31st March 1841, out of the men at Poona 18 died. For the same period, out of the 70 men, left at Bombay to do duty, 8 died. At Poona the mortality was therefore about six per cent, and at Bombay it was so high as eleven per cent. Almost every fatal case both at Poona and Bombay was dysentery, most generally complicated with hepatic abscess. It is necessary to state so as to render the benefit of the change more obvious, that of the 300 men sent to Poona, about seventy were sick men, requiring carriage, while of the men left for duty at Bombay, care was taken to select the most healthy and none were sick. When the men were dying at Poona of the dysentery and hepatic disease, it was then attributed to their removal from Bombay at an improper season; and in the Annual Report of the Regiment, this was given as the cause, an opinion which was found to be so incorrect, only when a numerical comparison was made.

*Remarks.* The conclusion to be drawn from the above fact, is, that Europeans quartered in an unhealthy station ought to be frequently changed, at least after the unhealthy season is over; for it is well known that many constitutions will resist an injurious climate for some time, but if exposed to it, for a year or two, they will either die, or become useless to the service as soldiers, whereas if the period of residence in an unhealthy place be broken, by a few months' residence under a more genial climate, both the body and spirits of the soldier will be improved. No theoretical ideas (unless supported by facts) should prevent the frequent change of European troops from an unhealthy to a healthy station, however dissimilar the climate may be, for there are many instances of a sudden transition of climate being beneficial. I shall here quote one or two of them.

1st. When the crew of a ship of war on the tropical West India station, becomes sickly, a short run of a few days, to the frigid climate of the North American station, gives health and vigor to the crew, which might have become useless from sickness if the ship had been detained in the tropics. *

2d. When Regiments are transferred from the West India Islands

* Report on the health of the Navy.

to the frigid climate of Canada, the health of the men invariably improves and no well marked bad effect results. *

3d. In addition to the three hundred men of the 17th Regiment sent to Poona, losing fewer men by death than those at Bombay, the difference in the appearance of both classes was very great at the end of six months: those at Poona looking much healthier than those at Bombay.

The only objection to the removal of troops immediately after the sickly season, is the exertion of marching which cannot fail of being injurious. The less exertion the men are required to make, the less will they suffer; for when the fatigue of marching becomes painful, as it must be to the delicate men, it becomes injurious. The removal ought therefore not to be made until a month or so after the sickly season, so that the men may improve somewhat in strength, — and no march should exceed ten miles. Bowel complaints are generally much aggravated by the motion of a doolie and ought therefore not to be taken with the Regiment.

Although the feelings of soldiers are rarely considered, yet by letting them know, they are only to be quartered in an unhealthy station for a short time, hope, that solace of the sick man, is given, and that recklessness and despondency which is created among bodies of men when death is frequent from sickness, and which circumstance often drives them to drink, might be prevented. The sick in hospital would cheer themselves up with the prospect of the change, and those at duty would endeavour to keep out of hospital, knowing that in a short time they will march to a better place.

* Report of the removal of the 65, 36, 69, 37, and 87th Regiments from the West Indies to Nova Scotia, by Staff Surgeon Elliot, Edin. Medical Journal, April.

## Article VIII.

### *Notes on the treatment and pathology of Intermittent and Remittent Fever as observed in the European General Hospital at Bombay, during the five years, from* July 1838 *to* July 1843. By C. Morehead, M. D.

Presented, December 1843.

During these five years, 1839 cases of fever of all kinds have been admitted into the European General Hospital, which is at the rate of 24.2 per cent of the total admissions. The number of deaths has amounted to 66, which is equivalent to 3.5 per cent of the admissions, and 12.1 per cent of the aggregate deaths in hospital.

Such is the average of the five years, but the per centage of admissions from fever, on the total admissions, has varied in different years; (e. g.) in the year 1841, it was as high as 31.3; and in 1840, it stood at 20.1. But the difference of ratio of the fevers to other diseases is still more striking in different months, — thus again taking the average of the five years, the rate in October is as high as 44. per cent, and in February, as low as 13.3.

With the view of shewing the comparative prevalence of fever in different seasons, let us divide the year into two equal periods, the first half extending from the beginning of December to the end of May, gives (of fevers) 15.8 per cent of the total admissions, and the half year from the 1st June to the end of November exhibits a per centage of 31.

The rate of mortality from fever, when considered with reference to the number annually admitted, would seem to observe a just relation to the prevalence of the disease. In the year 1841, when the per centage of admissions was 31.3, the per centage of deaths of these was 4.9, and 20.7 of the total hospital deaths; whereas in the year 1840, in

which the admissions were 20.1 per cent, the deaths were 2.5 and 6.6 respectively.

But when we again take the average of the five years and consider the rate of mortality with reference to the number of monthly admissions, the result is very different. In October with the admissions of fever 44 per cent, the deaths are 1.8; and in December with the admissions 15.3 per cent, the deaths are 8.5.

Let us also consider the rate of mortality from fevers with reference to the division into half years. During the first half year, from December to June with the admissions at 15.8 per cent, the deaths are 4.8 per cent of the admissions, and 9.1 per cent of the total hospital deaths; in the second half year when the admissions are 31 per cent, the deaths are 3.3 per cent of the admissions, and 16.9 per cent of the aggregate deaths.

In the tabular statement (No. 1) which is annexed to these notes will be found the data on which these calculations are grounded. They must not however be held necessarily to represent accurately the comparative state of health of the island of Bombay during the years to which they refer; because the inmates of the General Hospital are not the sick of a fixed community but of one whose numbers fluctuate, and moreover in years of great sickness the hospital is exposed to a temporary and occasional influx of the sick of communities who, under ordinary circumstances, are accommodated elsewhere, —for example, in the month of October 1841, the admissions of fever are 143, but in the same month of any other year they do not rise to 70. Though the inference, that in the year 1841 fever prevailed more in Bombay than in any of the other five, would be perfectly correct, — still the degree is erroneously expressed by these numbers, because of the 143 fevers admitted in October 1841, 100 were of H. M.'s 17th Regiment, a class of patients generally treated in the Regimental Hospital, but sent on this occasion to the General Hospital, as a measure of convenience.

The fevers received into the General Hospital have been classed in the official returns under the heads * Intermittent and Remittent, which

* I do not think that any difficulty has been experienced in classifying the fevers observed in the General Hospital. I have never witnessed a case which could be classed with the synocha or synochus of Cullen. The occurrence of typhoid symptoms in cases of protracted remittent is not very uncommon, and will be afterwards noticed in these notes; but these arise under very different circumstances from the analogous symptoms in the continued fever of temperate climates.

division, though not insuring perfect nosological accuracy, is sufficient for practical purposes. In the remarks which I propose to make, I shall observe the following order : —

1. Intermittent Fever.
2. Remittent Fever.
3. Pathology of Intermittent and Remittent Fever.
4. Remarks on some of the chief remedial means which there may not have been opportunity of conveniently considering under the 1st and 2nd heads. (e. g.) Blood-letting ; cold affusion ; blisters ; emetics ; use of calomel ; of purgatives ; of quinine ; of opiates ; of change of air and climate.
5. Tabular statements shewing the admissions of fevers of all kinds ; of Intermittent fevers ; of Remittent fevers ; and of Ephemeral fevers.

## I.

### Intermittent fever.

The admissions from intermittent fever amount to 1503, equivalent to 81.6 per cent of the total admissions from fever, — the number of deaths being 18 or 1.1 per cent of the admissions, and 27.2 per cent of the total deaths from fever. But in the numbers entered under the head of intermittent fever in the hospital returns, 159 cases designated in the register, " ephemeral fever" have been included. Thus, to ensure nosological accuracy, the statistical statements made in regard to the admissions from intermittent fever should be subjected to a deduction of 10.5 per cent. This correction I have not attempted to apply in this place, because it would have caused an apparent discrepancy between these statements and the hospital records, which I have thought it desirable to avoid ; and as a more expedient course I have supplied a tabular statement (No. 4.) containing the data necessary to effect the correction desired.

The inmates of the General Hospital, suffering from intermittent fever, may be appropriately divided into two classes.—1st. Those affected with intermittent fever endemial to Bombay, consisting chiefly of seamen, the military staff of the Garrison, and the poorer classes of the fixed resident European community. 2nd. Persons affected with the more obstinate endemic of other localities, and who are either sent to Bombay with the view of being benefited by the change, — or who arrive here, at certain seasons, in the round of their professional avoca-

tions. This latter class consists almost entirely of seamen, very generally of the Indian Navy, affected with intermittent fever acquired in the Persian Gulf, the Red Sea, and latterly, during the late operations, on the Coast of China, or in the Steam Fotilla of the river Indus. This class generally reaches Bombay after the opening of the season subsequent to the monsoon, viz. in the months of November December, or January, having been exposed to the autumnal endemic of these more malarious countries.

There will be a practical advantage in considering these two classes separately.

The endemic intermittent of Bombay is in general sufficiently tractable; most commonly, in the first attacks, assuming the quotidian form, with after a day or two a marked tendency to become tertian in its type. Though easily checked, the * liability to return is well marked, and in instances of frequent relapse the type is generally tertian. The complications for the most part are of little importance and enlargement of the spleen is not common.

These remarks are intended to apply to the endemic as it appears at all seasons, for, I do not find that the first attacks of vernal intermittents have less tendency to put on the quotidian form, than the similar attacks in the autumnal months. But in considering the comparative frequency of the different types of intermittent fever, it must be kept in view, that, when the principle of treatment pursued has been invariably to check the disease at the earliest possible period by the free exhibition of quinine, the types are undoubtedly modified, and attempts at perfect nosological accuracy are necessarily frustrated.

The cases of the second class are, in general, more obstinate and the type most commonly tertian;—the subjects of the disease being frequently sallow, reduced in flesh, and strength, with a state of constitution more or less cachectic, and not unfrequently affected with enlargement of the spleen, — occasionally with diarrhœa and tendency to dropsical effusion.

*Treatment.* In first attacks of the endemial intermittent fever of Bombay, it is generally necessary to commence the treatment with an

* The most obstinate endemic intermittent that I have witnessed in the General Hospital, was in the men of Her Majesty's 17th Regiment, received into Hospital in October 1841; and this was the sequela of the fever from which the Regiment had suffered so severely, while at Colaba, in the monsoon months, and which has been so well described by Dr. Arthur S. Thomson in the Society's Transactions, No. 5.

emetic and purgative ; but afterwards in these, as in all the other forms of the disease to which my present remarks are intended to apply, the only important indication is to prevent the recurrence of the paroxysm by the suitable administration of quinine during the several intermissions, —the very earliest of which can, in general, be taken advantage of with perfect safety. The manner of exhibiting quinine which I have found most effectual is to give a full dose, from three to ten grains, about two hours before the expected paroxysm, to repeat it every hour for three doses or till the hour of expected accession has been well passed, and then to continue half the quantity every hour for two more doses. From four to five grains will generally be found sufficient in the endemic of Bombay, three grains being, for the most part, too little ; but in the obstinate endemic of more malarious countries, those classed under the 2nd head, it is often necessary to give eight, or ten grains, — the latter dose is not very frequently required, and I do not recollect ever to have found it necessary to exhibit a larger one. Should, by these means, the paroxysm be prevented, it is of course necessary to continue the quinine in the same manner, but in decreasing doses, for several successive days at the anticipated period of accession.

In the management of regular intermittent fever the treatment during the paroxysm is of comparatively little consequence. In first attacks when the constitution is vigorous and the vascular action of the hot stage considerable, it may doubtless be expedient to use the cold affusion, and exhibit antimonial diaphoretics ; and when local determinations of blood, to the head for example, cause much discomfort, the application of leeches will be useful ; but general blood letting is in ordinary cases seldom necessary.

In cases of frequent relapse and in which the several stages of the disease are well marked, I am convinced that much harm is often done by too active interference during the hot stage. It is no doubt true that during this period there is frequently headache or pain of the hypochondria, very generally of the left, for which, when dependent on increased determinations of blood, it may be expedient to direct local depletion ; but very frequently such pains do not require this kind of treatment for their removal, and in cases which have been protracted for some time, there can be no doubt, that frequent leeching, the too free use of purgatives, mercurials, and too prolonged a course of low diet are prejudicial from their tendency to induce a state of confirmed cachexia. Nor is local depletion always successful in such cases, in removing headaches and

pains of the hypochondria, for very frequently it will be found that though for the time the pain may have been alleviated, it will recur with greater aggravation in the succeeding paroxysms, — a result which might have been anticipated, for it is very probable that the kind of pains referred to, is not unfrequently more of the character of neuralgia than of inflammation.—Indeed, there are occasionally other trains of symptoms, such as oppression about the chest with dyspnœa, occurring in the course of the hot stage of protracted and confirmed intermittents, in deteriorated constitutions, which are calculated to give, still more strongly, the impression of the existence of serious local disease, but which from the result have evidently not depended on any serious local lesion.

The indication in the management of all these cases is the same, — to prevent the recurrence of the paroxysm by the sufficient administration of quinine, and to improve the general state of the constitution by all the practicable means at our disposal.

It may be objected to these views, that they tend to neglect the complication of local inflammatory action, and the use of the means considered most efficient for its removal. But to urge this objection would be to misapprehend the tenor of my remarks, for it is not intended to call in question the great importance of detecting local inflammatory complications, or throw any doubt on the efficacy of the local detraction of blood for the removal of these, in constitutions not deteriorated by protracted disease.—Still, however, though this principle of treatment is fully admitted as applicable to, and often necessary in the hot stage of suitable cases, it is, I think, a mistake to conclude that on such account the use of quinine during the intermission is less required, for, very generally speaking it will be found that local inflammatory action will be more effectively lessened by preventing the paroxysm of fever (sure to increase that action) than by the use of leeching during its persistence and the neglect of quinine during the intermission.

It is not however to such cases that my preceding remarks were intended to apply, but to those in which the constitution has been deteriorated by long existing disease. In the event of local inflammatory action arising in such states of the constitution, it seems to me very clear that little good can be looked for from the detraction of blood, that on the contrary it is fair to infer that it can have little other effect, than to render the state of the patient more desperate. When general cachexia, and local inflammation of important organs or its sequelæ co-exist, the prognosis is undoubtedly most unfavorable, but it cannot, I think, be to

strongly urged that in such cases the indication of cure is to improve the general health by suitable tonic measures, and to trust to the local injury lessening, as the tone of the constitution becomes more vigorous.

The complication of enlargement of the spleen is so common in cases of obstinate intermittent fever, and has been generally so much the object of special attention in practice, that it would be an omission here not to allude to it ; yet, I do not think that it calls for any great deviation from the general principles of treatment which I have endeavoured to lay down. In cases in which the vigour of the constitution has not been much impaired (and such are not very common), the mode of treatment of enlargement of the spleen by repeated small leechings and the regular exhibition of aperients with sulphate of iron and quinine, as recommended by the late Mr. Twining of Calcutta, is, I think, very applicable ; but I doubt its suitableness in cases, in which the cachexy has proceeded far, for in many of these it has seemed to me that the enlargement of the spleen gives place as the general health improves. In fact, to improve the health by small doses of quinine with half of a grain of sulphate of iron, and a few minims of diluted sulphuric acid thrice daily, to have recourse to pure air, appropriate light nourishing diet, and the use of the compound rhubarb pill as a laxative when required, has seemed the best mode of management.

Whilst advocating so strongly the importance of the use (in their proper place) of antiperiodic remedies, my remarks have been intended exclusively to apply to the sulphate of quinine, and this, because my experience of any other remedy of that class has been very limited indeed.

Quinine has been found in every respect sufficient, for the occurrence of an idiosyncracy calculated to interfere with its use is a very rare event, in *hospital* practice. In the instances in which, for some reason or other, arsenic has been had recourse to as a substitute, I do not recollect any very striking evidence of its efficacy, and certainly not one of an obstinate intermittent intractable to * quinine, but yielding to arsenic.

To prevent misapprehension, it is expedient to specify that the observations which I have made on intermittent fever, as occurring in the General Hospital, are intended to apply to cases in which the paroxysm and intermission are well marked, the tongue during the latter being clean, and the functions performed with tolerable regularity. But, of

* It will of course be understood, that I here state the result of my own experience in a particular field.

the intermittent fevers entered in the return, there are many occurring in the autumnal months, in which there is a daily paroxysm of fever, and a daily intermission as regards the frequency of pulse and heat of skin, but during which the tongue continues coated and the functions of the abdominal viscera more or less deranged. As a question of nosology, I am by no means certain that such cases would not be more appropriately classed under the head remittent ; but be that as it may, I am sure that in a practical point they are more conveniently classed with that form, for the treatment in every respect resembles that which it is most expedient to follow in the milder remittent types, — for which reason the remarks which will be made under that head may be held to be equally applicable to the kind of cases to which I have now alluded.

## II.

### Remittent Fever.

The admissions of remittent fever during the five years amount to 336, being 17.6 per cent of the total admissions from fever. The deaths amount to 48, being 14.2 per cent of the admissions from remittent fever, and 72.7 per cent of the total deaths from fever of all kinds. But the relative proportion of remittents varies with the season. During the half year from the 1st December to the 1st June, remittent fevers are 14.4 per cent ; during the half year from June to December, 20.9 per cent. Nor is the mortality in relation to the prevalence of the disease. During the 1st half year, it is 18. per cent of the admissions ; and during the 2nd, it is 12.4. But the months in which remittent fever is most prevalent, are July, August and September, — nearly the period between the summer solstice and the autumnal equinox : during these months the admissions are 28.7 per cent of the total admissions, and the deaths are 13.9 per cent of the admissions.

The persons affected with remittent fever who resort to the General Hospital are, in a great proportion, seamen, and in some of the worst cases which have occurred the fever has been attributed, and apparently with good reason, to * the malaria of the Dockyard.

* With the view of ascertaining to what extent the crews of ships undergoing repairs in the Dockyard at Bombay, were liable to be affected with fever, I obtained through the kindness of Captain Ross, the Master Attendant, a list of ships of all kinds received into the Dockyard during the period (viz.

In my remarks on the symptoms and treatment of remittent fever

from 1st July 1838 to 1st July 1843), to which these notes on fever have reference, with the date of docking and undocking each ship. The number of ships amounts to 170. This list I compared with the Hospital Register and noted, opposite to the name of each ship, the number of the crew admitted for fever into hospital, during the time the vessel was in dock. The following is the result. Of the steamer Atalanta in dock from the 23rd October 1839 to the 19th February 1840, 9 fever cases ; of the private ship Orleana in dock from 13th October to 11th November 1840, 12; of the ship Herefordshire in dock from 13th October to 10th November 1840,10 ; of the private ship Morley in dock from the 22nd July to the 15th August 1841, 10 ; of the remaining ships, 3 fever cases were admitted from one ; two cases from three ; and one case from 10, respectively. From the remaining 152 ships, there were not any admissions of fever during the time they were in the Dockyard.

The fevers from the ships Orleana and Herefordshire, I recollect very distinctly ; I am in possession of a memorandum to the effect, that on the 8th November 1840, there were 26 cases of fever in the Hospital, of which there were 22 from these two ships, shewing that the shipping in the Harbour was comparatively free from the disease. The type was chiefly the mild remittent. The admissions from the ship Morley were of similar type ; and during the time that this ship was in dock, H. M.'s frigate Endymion was also there, and part of her crew suffered severely from fever of a very malignant type. There were not more than three or four cases admitted into the General Hospital from the Endymion ; but the following facts have been extracted by me from official records to which I have been allowed to refer.

The Endymion was in dock from the 19th July to the 19th August 1841. On the 28th July the first cases of fever among the Marines took place ; from that date to the 12th August, 27 cases occurred ; and to the 23rd, 11 more, and 2 additional cases were subsequently admitted, making altogether 40 Marines affected with fever in one month, all of whom had slept on board in the tour of their duty during the time the Endymion was in dock ; and in addition to these 40, there were only two others who slept on board. Thus of 42 who slept on board occasionally, 40 were affected with remittent fever ; and to mark the severity of the type, up to the 30th of August, 14 had died, and 10, several of whom were in a doubtful state, remained in Hospital. Whilst such was the extreme suffering of the Marines of the Endymion, whose duty as sentries over stores, led to their exposure to the noxious night air of the Dockyard, the following was the condition of the seamen. From the 24th June, the date of the arrival of the Endymion in Bombay, to the 30th August, there were 95 cases of seamen (blue jackets) of fever ; in none of these did the type resemble that of the Marines and none proved fatal ; and it is distinctly noted that the carpenters employed during the day upon the repairs of the bottom of the vessel, with one exception, escaped any severe attack, and several of them were not attacked at all.

It is a rule of the Dockyard, that the crews shall not sleep on board whilst the ship is undergoing repairs there ; and the statements which have been just made shew the salutary operation of this very necessary regulation.

as observed in the General Hospital, I shall observe the following order : —

1st. Remittent Fever in its most common and most tractable form.

2nd. Congestive Remittent Fever.

3rd. Remittent Fever assuming for some days an almost continued form, and exhibiting in the worst cases well marked typhoid symptoms.

3rd. Remittent Fever complicated with Jaundice.

4th. Certain features occurring in the course of Remittent Fever, which cannot with accuracy be included under any of the above heads.

1st.

*Remittent fever in its most common and most tractable form.*

The admissions into the General Hospital from the shipping, take place, generally, from one to three or four days after the first attack, and after medical treatment has been followed on board with more or less regularity. The remittent character of the fever is generally well marked, — in some, as regards the heat of skin and frequency of pulse, it amounts almost to an intermission, — and under both circumstances the exacerbation creeps on without any well marked sense of chilliness. The period of febrile accession somewhat varies, — in the greater number the exacerbation is at noon, continuing till evening and then remitting towards bed time. In some, however, there is a well marked remission during the day, and a febrile exacerbation during the night. There is however in these latter cases often good reason for suspecting that this deviation from the more regular course of the disease is, in a measure, the result of treatment, brought about from quinine having been given during the morning remission with the view of preventing the accession at noon, and having been continued till evening, — the effect of which treatment is to delay the period of the febrile accession. In almost all, during the paroxysm there is a good deal of headache with flushed countenance ; in a small proportion, there is vomiting with tenderness at the epigastrium on pressure. In the greater number, the tongue is coated yellow in the centre, in some expanded, in others contracted and pointed with florid edges and tip. The pulse is very generally neither full, firm, nor bounding, but frequent and moderate in strength. In a great many instances the secretions from the bowels are dark, or greenish in colour, and become natural as the tongue cleans.

In regard to the *treatment*, it sometimes happens that the patients have been bled before admission, whether with benefit or not, is, I think,

occasionally very doubtful; but it is not often that general blood-letting is required during their residence in Hospital. —During the paroxysm, in suitable cases, cold affusion followed by frequent tepid sponging may be repeatedly used with great advantage. To relieve the head, from 36 to 60 leeches are very generally required, and it is often a very necessary precaution in the worst cases to shave the head and assiduously to use cold applications.

In cases in which there is tenderness of the epigastrium with thirst, a tongue contracted with florid edges and tip,— all of which conditions may be viewed as decided signs of gastric irritation, — there is necessity for more or less leeching, blisters, effervescing draughts, the avoidance of emetics, antimonials, and drastic purges.

In regard to leeching whether of the head or epigastrium, the period of the paroxysm is that which, it seems to me, should as far as practicable be selected.

There is also a stage of these fevers in which local determinations of blood are very beneficially influenced by the application of blisters; but here, whether used to the nucha or to the epigastrium, — the period of remission or intermission is that which ought to be selected, — so that the impression may be made on the affected organ before the febrile accession comes on and leads to a serious aggravation of the local affection.

The circumstances which make it expedient to have recourse to blistering in preference to leeching, are the facts of the fever being of some days' duration, of leeches having been freely used already, or the state of the pulse or the well known intemperate habits of the patient contra-indicating depletion. The head symptoms which lead to the application of blisters to the nucha are a want of alertness of manner, a tendency to doze or sleep, an unsteady protrusion of the tongue, and the absence of the conditions which justify leeching. There are moreover cases occasionally observed, in which the pulse is feeble and small, and the surface coldish, in which, though the head symptoms are not so well marked as those above noted, a blister to the nucha acts very favourably,—possibly as a stimulant to the whole system. Blisters are required to the epigastrium in cases in which vomiting persists after sufficient leeching, or in which leeching is contra-indicated,— selecting in both instances, as already recommended, the period of remission; for a hot dry skin is always a contra-indication to blistering, and when present, in cases otherwise suitable, it is often useful to apply a few leeches, to watch for the commencement of a remission, and then apply the blister.

In regard to emetics they are often very useful at the commencement of the attack, and ought not to be omitted in cases in which the tongue is foul and expanded, in which there is nausea without vomiting, and in which the epigastrium is without tenderness or much tenseness ; but where the epigastrium is tender, the tongue florid at the tip and edges, emetics ought to be avoided. The emetic which I have found the most appropriate is ipecacuanha uncombined, in doses of 25 grains.

During the first two or three days of the attack, it is in general a very important part of the treatment to give a full dose of calomel at bed time, not with the intention of affecting the system, — for this, when practicable, except in peculiar cases, is to be particularly avoided, — but with the view of acting on the abdominal secretions. The best guides to the use of calomel are a foul tongue, vitiated secretions, an abdomen full and resisting, and the action of the vascular system steady and not depressed. Under these conditions a ten grain dose of calomel with a few grains of antimonial powder, succeeded on the following morning by a drachm of compound powder of jalap has, in general, a very beneficial effect; and it is in most cases expedient, if the tongue continues foul and the secretions still vitiated, to repeat a smaller dose of calomel on the one or two succeeding nights.

Where, however, there is much vascular excitement attended with irritability of stomach, the application of leeches to the epigastrium should precede the exhibition of calomel ; and where there are signs of gastric irritation,—a tongue coated but with florid edges and tip, uneasiness more or less at the epigastrium, without headache or much pyrexia,— it is often of much advantage to combine the calomel with muriate of morphia.

In regard to the kind of purgative which it is expedient to use, it will, I think, be found that generally the compound powder of jalap is sufficiently powerful, and that in the great majority of cases infusion of senna with sulphate of magnesia is too drastic : for in remittent fever, as generally observed in the General Hospital at Bombay, there is, under the use of much purging, a well marked tendency to the occurrence of dysenteric symptoms. This frequently observed feature of the Bombay endemic ought to be carefully kept in view, and ought to be the more particularly anticipated in those cases in which the tongue is florid at the tip; — in such, the compound powder of jalap must frequently give place to castor oil, and the calomel should, when practicable, be shielded with ipecacuanha and the muriate of morphia, and should as soon as possible be changed for hydrargyrum c. creta.

The exhibition of calomel and purgatives, as now recommended, can seldom be necessary after the third or fourth day of treatment, and is recommended with the view of re-inducing the natural state of the secretions from the liver and bowels, and thus preventing stagnation in the circle of the portal circulation. Perhaps, there is no better practical guide to the advantageous use of calomel and purgatives than the state of the abdomen on pressure, in regard to fulness, or hardness, — taking care not to confound this sign as occurring at the outset of fevers ( which is that to which I allude ) with the somewhat analogous physical condition resulting in the advanced stages of protracted cases, generally tympanitic in character, and associated with a typhoid state of the system ; or that also somewhat analogous state coming on earlier in cases in which there has been free use of purgatives, also more or less tympanitic in character, and which there is often good reason for attributing to intestinal irritation caused by the already too free exhibition of these remedies. These distinctions are I think well grounded, not difficult to recognize and most important to recollect.

When the abdomen is supple, and without fulness, we may be sure that there is no necessity for the use of purgatives ; and though with this state there should still persist an unnatural condition of the secretions from the bowels, such condition as well as the foulness of tongue which generally accompanies it, is to be remedied by gentle and alterative measures,—for I think there is good reason for believing that in such cases there very often exists a degree of congestion of the capillary vessels of the mucous coat of the intestines, apt, under the irritation of strong purgatives, to be fretted into a state of inflammation and ulceration. It is indeed very true that a somewhat similar state of capillary congestion is not unlikely to result from a decreased exercise of the secretory functions both of the liver and of the mucous lining of the intestines,—so that the middle course is the safe one, tending to the one side or to the other, according to the circumstances of individual cases,—avoiding irritation, and at the same time freeing the secretory capillaries by calling forth the moderate exercise of their secretory action.

After the 1st or 2nd febrile exacerbation a full dose of muriate of morphia may in many cases be exhibited at bed time with much propriety and benefit. Where there is headache with much heat and dryness of skin and vascular excitement, the muriate of morphia is contra-indicated ; but in most cases where there has been good management at the commencement,—adequate leeching, the appropriate use of calomel and

purgatives,—there follows, on the succeeding night, slight pyrexia with restlessness but without headache, a supple abdomen, a tongue still foul but moist, a pulse above natural frequency but soft. In a case of this kind, calomel or blue pill, in a dose proportioned to the state of the tongue and the condition of the secretions in regard to quantity and quality, with a grain of ipecacuanha and one of muriate of morphia, preceded by a foot bath, perhaps by a few leeches to the temples, will generally be found to give a good night's rest; and if followed on the morning by castor oil, or compound powder of jalap, will very frequently be succeeded by a forenoon remission so distinct that quinine may be freely exhibited; and further, it tends to bring about a natural state of the secretions with less risk of gastro-enteric irritation.

But the remedial means, to which as yet these notes have been directed, have had in view the decreasing the state of vascular excitement during the paroxysm, the protecting organs important to life from the risk of harm from undue determinations of blood, and the correction of functions which may chance to be deranged. These are all, doubtless, very important and essential considerations, but they are subservient to the main indication of cure in remittent fever, which is in every respect the same as that which has been insisted upon in regard to intermittents, viz. to take advantage of the earliest well marked remission, or intermission, and adopt means to prevent the recurrence of the febrile paroxysm,—or failing that, to postpone its access, or lessen its severity; and to observe the same course in all subsequent well marked remissions, irrespective of local complications which may require special means for their removal, and to which it is very important that every attention should be given, but which should not be allowed to interfere materially with the steady pursuit of the leading indication of cure as above stated,—and to effect which the sulphate of quinine will generally be found fully sufficient.

If, during the paroxysm of fever, the local symptoms of headache or irritability of stomach have been met by appropriate treatment and the bowels have been freely acted on,—the succeeding remission will generally be found sufficiently well marked to admit of the use of quinine; but, it requires to be given in different forms of combination to meet the peculiarities of different cases. If there be a remission, but the tongue is foul, and the secretions have not been called forth by mercurials, or the bowels freely acted on,—the quinine should be combined with calomel, aloes and ipecacuanha. If, on the contrary, calomel has already been freely exhibited, but the tongue continues foul and the secretions unna-

tural, then let the quinine be given in combination with blue pill. If there be tendency to diarrhœa, the quinine should be combined with hydrargyrum c. creta, muriate of morphia and ipecacuanha. If there be nausea and tendency to vomit, the ipecacuanha should be omitted and the pill or powder of quinine be followed by an effervescing draught.

Generally, three grains of quinine given every 2nd or 3rd hour, for four or five doses, will be found sufficient to check the febrile paroxysm, and, if not to prevent it, at least to postpone its access and lessen its severity.

Where calomel and aloes or blue pill are used, generally, two grains of each and a grain of ipecacuanha with each dose of the quinine, are sufficient; and as the tongue cleans, or in instances in which it has not been foul, it is better to give the quinine in solution,—and in cases such as those of which I now treat, 4 grains, every 2nd or 3rd hour, for four or five doses, will generally suffice for preventing the recurrence of the paroxysm. And on subsequent days the quantity of quinine may be by degrees reduced, and finally continued thrice daily as a tonic in one grain and a half doses, with diluted sulphuric acid. At the same time, when necessary, the secretions from the bowels should be gently, and by degrees, brought to their natural state by means of small doses of blue pill and ipecacuanha, and also of castor oil. Purging should be avoided and there ought to be a cautious return to a generous diet, avoiding equally, on the one hand, a long continuance of one too low, and, on the other, too speedy a return to stimulating food. In some cases it is often useful to combine ℥ii of sulphate of magnesia with the quinine mixture,—when the laxative which has been given has not produced the desired effect, but where a remission is present of which it is desirable to take advantage, but at the same time not prudent to forget that the bowels have not been freely acted on. Effervescing draughts are very useful in the cases with gastric irritability,—they are refreshing and aid the action of the laxatives.

In regard to the average duration of simple remittent fever treated in the manner now recommended, I find, on examining the diaries of sixteen well marked cases successfully treated, that from the commencement of the attack to the perfect cessation of all febrile symptoms, the average period is six days and a half,—of these, two having passed before admission, and four and a half under treatment in hospital. It is not to be understood that after six and a half days the parties were fitted to return to their respective duties, but only that after that time there was no re-

currence of febrile symptoms ; — for it was very generally necessary to continue the exhibition of quinine in decreasing doses for two or three days, and to allow three or four more in order to perfect the convalescence. There can however be no doubt that the more speedily and perfectly the febrile accessions are checked, the more rapid will be the convalescence and the restored efficiency.

2nd.

*Congestive Remittent Fever.*

I use the phrase congestive in that sense in which it has been understood by late * writers, when applied to fever, viz. that state, which takes place at the outset of the disease, of depressed action of the vascular and nervous systems ; the former characterized by an oppressed and feeble pulse, a coldish and frequently damp skin, and a defective condition of the secretory functions ; the latter by languor and drowsiness. This state is attributed correctly, I believe, to the intensity of the sedative influence of the malarious poison. Such cases prove speedily fatal either in the stage of congestion without a distinct febrile reaction having shewn itself, or reaction takes place and the remittent character of the fever becomes well marked and under careful management may terminate successfully ; or the remissions are badly marked, the fever becomes almost continued in type and typhoid symptoms are early evolved. There is certainly, as remarked by Dr. † Alison, considerable analogy between this form of fever and cholera. The collapse of cholera resembles in many particulars the stage of congestion, and when secondary fever takes place after cholera it is not very unlike the kind of febrile action which characterizes the reaction of this congestive type of fever. There is however this difference, I think, that the former runs a longer course and is more certainly complicated with local subacute inflammation of important organs. I have not observed that the congestive type of remittent fever is more apt to occur at one season than another. It would, however I think, be a fair inference to expect it at the seasons when the malaria is considered most intense, viz. from the summer solstice to the autumnal equinox ; but in fact the instances of congestive fever have not been of so frequent occurrence in the General Hospital, as to permit me to write of them with very much confidence.

* Outlines of Physiology and Pathology by Dr. Alison. p. 485.

† Outlines of Physiology and Pathology, loc. citat.

In regard to the treatment it has seemed to me that it should consist in the judicious external and internal use of stimulants, and of the exhibition of calomel and quinine frequently repeated. The instance in which I witnessed the most marked benefit from this treatment was in a seaman of the name of Crookberry, attacked with fever after exposure in the Dockyard in October 1840;—the skin was coldish and damp, the pulse frequent, compressible and becoming feeble, the manner heavy with drowsiness and wandering delirium, and the secretions from the liver and intestines not free. He continued in this state for 24 hours, not improving under the use of free doses of calomel, a blister to the nucha and the use of wine. Quinine and calomel were then given in two grain doses of each, and were repeated at intervals. The pulse and skin improved under this treatment and then two or three days of febrile exacerbation succeeded, and recovery took place.

Viewing the state of internal congestion of blood, which no doubt exists in these cases, as one of the conditions necessarily resulting from a depressed state of the vital actions of the vascular and nervous systems,— the practice of general blood-letting has not recommended itself to me as a means calculated to effect good. On the contrary, I am disposed to believe that it is likely to aggravate the mischief; and of this effect I have witnessed one instance in a private of the 15th Hussars, to the diary of whose case, however, I have not at present the means of referring.

In regard to the character of the subjects in whom these congestive symptoms are likely to appear, my impression is that they will be found to occur most frequently in persons who have passed the meridian of life and in whom there exists more or less long standing organic disease of the heart, the liver, or the kidneys.

3rd.

*Remittent Fever assuming for some days an almost continued form and exhibiting well marked typhoid symptoms.*

In years and at seasons when the causes of fever are intense, the endemic remittent of Bombay frequently exhibits a severer character than that which I have described under the first head ; and this greater severity is evinced by the tendency to a well marked remission being less apparent, and by the febrile exacerbation, in the worst cases, assuming an almost continued form for two or three successive days. Cases of this

kind are more difficult to treat, because they frequently do not admit, for several days, of quinine being given in doses sufficiently large to make any great impression on the disease. Still I think that even in cases in which the remission is very imperfect, quinine should be tried, and repeated, or not, in subsequent remissions, according to the effect.

When the evidence is good that this remedy has not acted well, all that can be done is to guide the patient through the paroxysm, protecting important organs from undue determinations of blood, and taking care that this indication is not effected by means which will too much reduce and depress the vital actions of the system, and thereby favor the accession of typhoid symptoms; — then, so soon as the remission becomes better marked, to have recourse to quinine. Though thus fully conceding that cases of remittent fever occur in which, unfortunately, it is not admissible to use quinine very early in the attack, still I am convinced that the more closely such doubtful cases are watched, the more frequent the opportunities of exhibiting quinine will be found to present themselves, and this watchfulness should indeed be enforced from the very commencement of the attack; for I believe that very often in such cases the tendency to a fair remission is more perfect during the two or three first days,—the continued form coming on as a subsequent event. This occasional feature of remittent fever would perfectly justify the opinion, were it disputed on other grounds, that it is a mistake to suppose that quinine only becomes admissible, after several paroxysms have taken place and a course of depletory treatment has been gone through; for it will not unfrequently happen that, by this course, an opportunity of checking the disease will have been lost, only again to recur after the lapse of several days, and then under circumstances comparatively unfavourable.

When remittent fevers of this kind do not prove fatal in the early stage from depression of the nervous system or complication of congestion or inflammation of important organs, (the latter however by no means common as a cause of death at this stage,) but continue beyond the eighth day, — or earlier where the predisposing causes have been intense, — then a new train of symptoms begins to appear. The pulse becomes feeble and more frequent, the tongue dry and brown, the hands tremulous with tendency to subsultus tendinum, and more or less muttering delirium and drowsiness are present;—and no doubt there is associated with these symptoms a loosely coagulating state of the blood. In other words, the remittent fever has assumed a typhoid character, and the signs of

this state are, in a great measure, the same as those which mark a similar change in the character of the continued fever of temperate climates. This is not otherwise than might be anticipated, for why should the signs differ,— what are they but an indication that the vital actions of the nervous and of the vascular system are depressed, and the vital condition of the blood modified, and from the same cause,—the lengthened continuance of febrile excitement ? When this state is present there is much precariousness, the prognosis being more or less unfavourable according to the age of the individual and the evidence of existing inflammatory action in the head, the liver, or mucous membrane of the intestines.

In young and previously healthly subjects, recovery from an unfavourable train of typhoid symptoms, including more or less delirium with well marked tendency to drowsiness, not unfrequently takes place ; and again, on the other hand, a similar train of symptoms may prove fatal and the morbid appearances found after death be very trifling.

When remittent fever has assumed this typhoid character, the only mode of managing it is, I think, to recollect the principles laid down by CULLEN, that "fevers tend to cure themselves" and that the indication of cure is "to obviate the tendency to death." * In fact, all that can be done in such cases is to reduce the increased temperature of the surface by tepid sponging ; to sustain the pulse by light nourishment, wine and other stimulants; to have recourse to the cautious and moderate use of blisters over the organs that may chiefly seem to be affected, (taking care that they are not carried to the degree of increasing the febrile excitement, and recollecting that in the typhoid state of remittent fever, in the very advanced stages, a tendency to run into gangrene is evinced equally as in European typhus,) and to keep the belly open by domestic enemata or very small doses of castor oil, if required.

Such are the resources to which we are restricted when typhoid symptoms co-exist with a state of fever in which the remissions are not marked; but should the remission become distinct,—the dryness and browness of the tongue offer no drawback to the use of quinine. I have seen

* Under these circumstances, to attempt to affect the system with mercury or to hope to control local inflammations by free leeching, or to correct the abdominal secretions by active purgatives, are measures so totally at variance with the indications of cure and so destructive of the faint hope of recovery which it is useful to maintain, that were it not for the indiscriminate manner in which these means have been frequently used, it would be unnecessary to allude to them here.

cases and of one the diary is before me, that of — Penn, ætat. 21, of H. M.s' Ship Endymion, ill with dockyard fever in which after about ten days of fever almost continued, and, in the last days, attended with brown dry tongue and typhoid symptoms, a remission was taken advantage of and quinine was freely used and continued through each succeeding remission with very marked benefit; the exacerbation decreasing and quickly ceasing, and, coincident with this effect, the tongue becoming cleaner and moister,— and that clearly because the dryness of the tongue is but a sequence of the persistence of the febrile action and one of the proofs of diminished secretion. Not only did the tongue in this instance become moist, but for a similar reason the secretions from the bowels became more regular, freer and more natural in appearance.

In the remarks which have been as yet made on the occurrence of typhoid symptoms in the course of remittent fever, I have considered such symptoms in their relation to endemics of a severe and somewhat malignant type resulting from the intensity of the malarious influence. But it is not only under these circumstances that typhoid symptoms present themselves, for they not unfrequently occur when there is no unusual severity in the endemic, or at seasons in which remittent fever is hardly endemial, — and this, in the milder types, in subjects whose constitutions have been deteriorated from some cause or other, (e. g.) insufficient food, lengthened exposure to hot weather, intemperance, depressing passions, or some previous disease; or, these predisposing causes not existing, from medical treatment at the commencement having been neglected, or (and this not the least frequent cause) having been too depressing in its character — too much general blood-letting and too often repeated —too free leeching, too much calomel given in repeated doses without any very definite object in view,—purgatives too drastic and too frequently given, and thereby causing an irritable state of the intestines. When several of these circumstances co-exist (for they are perfectly compatible) with an endemic of severe type, then are combined the conditions most calculated to produce a fever of a highly malignant and typhoid character.

4th.

*Remittent Fever complicated with Jaundice.*

Though the complication of jaundice with remittent fever is not a frequent occurrence in the Bombay endemic, a season seldom passes without a few instances being met with; and as it is a complication which ren-

ders the prognosis more unfavorable, it is well that we should entertain decided opinions in regard to the mode of managing such cases. According to my experience, the occurrence of jaundice is not a feature of the early stage of remittent fever, but will be found generally to come on about the eighth day and to be a complication of that type which has been considered under the 3rd head, as at a certain period evincing a tendency to assume a form more or less continued. Nor is it to be inferred, from the coming on of jaundice, that the depletory treatment in the early stages has been neglected, for I have witnessed it in cases where there had been more than adequate depletion and no stint of calomel or purgatives.

It does not appear to me that this variety of remittent fever calls for any very particular modification of the treatment. It does not, I think, justify the freer detraction of blood, or a more liberal exhibition of calomel than suffices to fulfil the indications for which these means are had recourse to in cases in which no such complication exists; and, above all, it forms no bar to the free use of quinine when the remission is of that character which, under ordinary circumstances, would justify its exhibition.

5th.

*Certain features of Remittent Fever not included under the first three heads, and not peculiar to any of the varieties.*

1. The tendency evinced in bad remittents to great collapse towards the conclusion of the febrile paroxysm, and the necessity of extreme caution in directing depletory measures at that stage, have been dwelt on * by Mr. Twining with great earnestness, and I think, judging from my own experience, with so much accuracy that his remarks cannot be too attentively considered.

2nd. Mr. Twining has also with much propriety called attention to those obscure cases of remittent fever, often neglected, in which the febrile paroxysm is badly marked and not attended with symptoms likely to occasion alarm. Cases of this kind have been noticed in the General Hospital at Bombay, chiefly, I think, in the months of June and July, and the insidious manner in which the disease creeps on, is often very striking. There may be very little in the well marked remission to excite alarm; there may throughout the stage of febrile exacerbation, when recognized, be little to attract attention beyond the considerable prostration of strength. In cases of this kind, with each recurring exacerbation, the pulse loses strength, the tongue becomes drier, tremors of the hands are

* Clinical illustrations of the most important Diseases of Bengal. *Passim.*

observed, slight wandering of the thoughts, and then delirium, and perhaps, unexpectedly about the tenth or twelfth day or earlier, the exacerbation terminates with extreme collapse and death; and not unfrequently in such cases the post mortem appearances are inconsiderable.

Cases of this kind call for guarded treatment and much watching, for when there is much prostration increasing from day to day without any evident local cause existing, it may be assumed that a febrile accession takes place some time or other in the 24 hours, and the exact period of its access ought to be ascertained without delay.

3rd. There are occasionally cases observed, chiefly I believe about the month of May, in persons of corpulent habit, in which there are irregular and badly developed febrile accessions, and occasionally fulness, if not pain, of the right hypochondrium with general uncomfortable but not well defined feelings, a coated tongue, fulness and resistance at the epigastrium, scanty watery evacuations, and a difficulty in moving the secretions of the liver and the bowels. Cases of this kind are, I think, occasionally entered under the head of fever, probably not with nosological accuracy, for it seems to be in some instances a train of symptoms depending on congestion and defective secretion from the liver and mucous linings of the intestines, and requires the use of full doses of calomel followed by purgatives.

## III.

### On the Pathology of Intermittent and Remittent Fever.

Were the evidence less conclusive than it really is of the idiopathic nature of European continued fever, it would surely be a fair inference to conclude that it possesses such character from the analogy of tropical remittent and intermittent fever; for not only do the worst cases of the former (remittent) not unfrequently prove fatal without leaving after death any appearances which can fairly be called morbid, but we occasionally observe instances of the latter (intermittent), in which local inflammations co-exist, and in which the stage of intermission — the cessation of febrile excitement — takes place equally as if no such local complications were present.

Judging from the symptoms during life and the morbid appearances found after death, the head is the organ most frequently affected with subacute inflammatory action in fever as observed in Bombay; but it cer-

tainly has not occurred to me to find any very strict relation between the urgency of the symptoms, and the evidence of the existence of inflammation.

In some cases there has been found well marked thickening with opacity of the arachnoid membrane; but it is not in such that the head symptoms have been the most urgent, or the fatal termination the most rapid.

In others there has been more or less vascularity of the pia mater, with more or less serum between the arachnoid membrane and pia mater, and, in some instances, * bullœ of air in the vessels. These appearances have been present, both in cases which have terminated fatally after a few days illness, and in those which have been protracted with typhoid symptoms; and, in many of them, the head symptoms — the low delirium and the tendency to stupor—have been better marked than in those in which subacute arachnitis was undoubted.

Again, it is not unusual, in youthful subjects, for cases in which there have been both delirium and tendency to stupor, to terminate favorably under the use of leeching, blisters, at times mercurials, and quinine during the remissions. The fact that the head symptoms occasionally quickly cease, if the febrile exacerbations be prevented, — and the other fact that, not unfrequently when cases with analogous symptoms prove fatal, there is no very marked evidence of inflammation of the membranes or of the substance of the brain having existed, —leave room to question whether the "tendency to death" is dependent, in the cases adverted to under the 2nd head, on inflammatory action and its sequelæ or on the depressing action on the nervous system of, in the first instance—those quickly fatal—the causes of fever, and in the second instance, the protracted continuance of the febrile excitement, — in fact, one of the phenomena of the typhoid state.

In cases in which death has taken place early in the attack and in which, after death, congestion of the vessels and some serous effusion have been found, — there has been, it may be admitted, more than natural afflux of blood to the head; but it is very doubtful, whether the existence of serous effusion and a moderate vascularity of the mem-

* I am not certain of the exact importance of this sign —bullœ of air in the vessels. It has, I think been little noticed by pathologists and not so far as I am aware related to any particular series of symptoms. Cases will be found here and there in Dr. Bright's medical cases and in Morgagni's works. It has seemed to me to be generally present in cases in which death has taken place suddenly by convulsions and coma, in subjects not previously reduced by disease or other cause.

branes can be held as proof of the same fact, in the more protracted cases. At all events, it is well ascertained that effusion of serum into the head, in greater quantity than is generally observed in those cases of fever, is by no means uncommon in protracted diseases in Bombay (and I presume elsewhere) in which there have been no head symptoms whatever. *

A state of ulceration of the glands of Peyer at the end of the ileum also occurs in cases † of typhoid remittent fever with gastro-enteric symptoms, just as it occurs in European continued fever with typhoid symptoms, and similar local complication. But it is not I think very frequently observed, partly perhaps from the disease not running so long a course as in European typhus, but terminating fatally before these morbid lesions have had time to evolve themselves.

In the statistical observations made at the opening of these notes it has been stated that during the half year from 1st December to 1st June, when the admissions from fever are 15.8 per cent of the total admissions, the deaths are 4.8 per cent of the admissions. Whereas during the half year from the 1st June to the 1st December— that including the autumnal period---when the rate of fever admissions is 31 per cent, the rate of mortality is 3.3 —about one-third less. This statement would seem to be in opposition to that law of endemic and epidemic diseases which exhibits their period of greatest mortality to be coincident with their onset. But to draw an inference of this kind would not be a legitimate deduction from the data before me, because the greater mortality under the head "fever" in the cold months is easily explainable,—a great proportion of the deaths in those months taking place in individuals who have suffered from fever in the autumnal months, and whose constitutions have been deteriorated. When such subjects suffer from a relapse generally of the intermittent type, it is very apt to be complicated in the cold season with dysentery or abscess in the liver; and in such parties, after a few days,

* This fact is very evident in the cases published by me in the 2nd No. of the Society's Transactions and of which there is a general summary at p. 158; nor is it very difficult to account for. With a decreasing mass of the circulating fluid and the necessity of the cavity of the head being always full, the quantity of blood circulating in the head decreases, and as might be anticipated its place is supplied by serum. I hope to be able to extend my remarks on this subject at some future time.

† Case lxxii, Page 63.

the complication becomes the important disease, and the fever quite a secondary consideration. *

## IV.

REMARKS ON SOME OF THE CHIEF REMEDIAL MEANS WHICH THERE MAY NOT HAVE BEEN OPPORTUNITY OF CONVENIENTLY CONSIDERING UNDER THE 1ST AND 2ND HEADS; E. G. BLOOD-LETTING; COLD AFFUSION; BLISTERS; EMETICS; THE USE OF CALOMEL AND PURGATIVES; OF QUININE AND OPIATES.

### *Blood-letting.*

It has been stated that, in the cases of remittent fever treated in the General Hospital, the practice of general blood-letting is seldom required, either because the constitutions of the subjects affected render the measure inexpedient, or because the stage, when it can be had recourse to with advantage, has passed. But there can be no question of the utility of blood-letting at the commencement of attacks of fever in persons of robust habit, not long resident in India, in whom the vascular action is strongly excited and steadily maintained; or in whom, with perhaps a less degree of vascular action, there is evidence of considerable determinations of blood to organs important to life,—conditions frequently present in Regiments on their arrival in India, or in fresh drafts of Recruits.

The extent to which depletion should be carried is a point on which the Physician must exercise his discretion in each particular instance, — keeping in view the ultimate advantage of effecting the indication aimed at with as little loss of blood as practicable, and recollecting that the judicious removal of sources of irritation, the adoption of free ventilation, the well timed use of emetics, cold affusion, tepid sponging, antimonials, &c. are all measures of considerable influence in lessening febrile excitement and lowering vascular action; and which, as lessening the necessity of large abstractions of blood, it is of very essential consequence assiduously to have recourse to.

* In a practical point of view, it is of importance to be aware that these fevers leave a very decided proclivity to attacks of dysentery or hepatitis,—the latter apt to run on to abscess—in the months of December and January; and this proclivity is, as might be anticipated, most marked in those persons who have been enfeebled by frequent relapses, or by a course of treatment too reducing.

The practice of repeating the venesection, two or three times, to lessen the vascular action of each succeeding paroxysm of fever, is not only, I think, in general quite unnecessary, but in the majority of instances positively injurious. For with what object is venesection had recourse to in these circumstances ?—surely not in the vain hope of cutting short the disease, for it possesses no such power. It is true that the vascular action of the existing exacerbation may be lessened, and the symptoms depending on that action may be alleviated,—but not only ( as I have witnessed in practice and traced in the review of the diaries of cases ) does the succeeding paroxysm recur with not less certainty, but, after a certain limit of depletory discipline has been passed, the febrile excitement returns with more severity and not unfrequently with all the local complications aggravated.

When we recollect that the causes of fever act with the greatest readiness and intensity on the debilitated, and that the fever continues to recur from day to day, because its causes do not cease, at the moment of application, to be influential on the human system ; and when we further reflect that the effect of frequently repeated venesection is to enfeeble the constitution, and, when adopted in fever, to reduce the person labouring under the disease to the condition of the very predisposed and that too at a time when the causes of fever are still influential, — we can be at no loss to understand how frequently repeated blood-letting in the course of fever is an improper proceeding.

In regard to the necessity of controlling the local determinations of blood, which present themselves in each paroxysm, it will be found that depletion by leeching or cupping is in general quite sufficient, and should also be followed within certain limits; for when carried too far it is open to the objections which I have urged against the practice of general blood-letting.

Though fully admitting that remittent fever is frequently complicated with local inflammation, and that, when such is the case, to detect this inflammation and control it by proper treatment are very important considerations ; and though deprecating very much any proceeding calculated to justify neglect in so important a point of practice,—still the fact is not to be concealed, that the worst cases of remittent fever prove fatal independent of all inflammatory action, and that too in cases in which the character of the symptoms might have justified a belief of its existence.

It is this extreme dread of inflammation which has led to every local pain or other symptom which by possibility can be attributed to that

cause, being met by the general or local abstraction of blood; and which practice has resulted from that marked retrogression, since the time of CULLEN, of sound opinion regarding the phenomena of fever,—the denial of its idiopathic character, and the belief of its necessary dependence on inflammation located somewhere.

If the cautions, which I have ventured to urge against indiscriminate blood-letting, are just in circumstances most favorable for the use of that remedy, or even if dissent from such opinions may be fairly entertained,—I believe that all are agreed in regard to the inapplicability of blood-letting in subjects long resident in India or who have suffered from former disease, who have led dissipated lives, or have been exposed to depressing influences of season, climate, domestic circumstances, &c.

The object then of these notes has been to confine the practice of venesection to the commencement of attacks of fever in subjects of phlogistic diathesis, in whom the state of vascular action runs high. If the grounds on which this restriction is advocated be tenable, then, when it is recollected that the period of fatal termination of bad remittents is not in the height of the vascular action, but in the collapse which succeeds it; and that also in cases of fever resulting from a concentrated malaria, or in which a tendency to typhoid symptoms has appeared, the vascular action tends to be depressed; and that of such are the worst remittents — those in which the mortality is greatest — it then follows that little dependence can be placed on the abstraction of blood as a means of lessening much the rate of mortality from remittent fever, and that in the worst cases it is an injurious proceeding.

But it may be urged against these remarks that they are of little practical importance, for blood-letting has been very freely used in the treatment of remittent fever, and that of cases thus treated a great many recover. I do not suggest this very illogical argument with the intention of taking up my own time, or that of the Society in discussing it, but that I may be afforded the opportunity of stating very distinctly, not only the negative disadvantage, but the positive harm which results from following a course of treatment which leads to a tedious convalescence, and leaves the patient reduced and feeble. I have in a note appended to my remarks on the pathology of fever stated the fact of the proclivity of fever patients to attacks of dysentery in the cold months, and this, on a principle applicable to all fevers, is best marked in the most enfeebled. The question of the best mode of treatment of fever is not one which is resolved by the recovery of the patient, but rests on the rapidity of the cure, the character of

the convalescence, and the physical state of the patient when pronounced to be recovered; and these are questions of very grave importance in the treatment of fever, in those bodies of men whose usefulness to the State is dependent on their physical condition.

### *Cold affusion.*

Used in those cases and that stage of the paroxysm in which the skin is dry and steadily above the natural temperature, and the pulse is of good volume, is of very great use by shortening the duration of the paroxysm, lessening the vascular excitement, and, when the head is the organ affected, alleviating the head-ache, and either doing away with the necessity of applying leeches, or of reducing considerably the number required.

The use of this remedial measure is contra-indicated in fever as in other diseases, when there is complication with pectoral affection, and also probably when gastro-enteric symptoms are present, though on this latter point I would not be understood to write with much positiveness, because it is not improbable that, in a climate with a mean temperature of 80, the affusion of water not artificially cooled may not be attended with the same risk, as the use of cold affusion in extra-tropical countries. But still, even if only confined to the cases in which head symptoms are the prominent local complication, it will be useful in a great many instances,—for such form a very considerable proportion of remittents.

When the use of the cold affusion is doubtful or when the suitable period of the disease or the appropriate stage of the paroxysm has passed, tepid sponging may be had recourse to with very good effect whenever the skin is above the natural temperature. And in all cases of remittent fever extending to two or three paroxysms, in which the excitement during the stage of exacerbation is considerable, and in which the head is affected, the scalp should be shaved, and cold applications be assiduously used.

### *Blisters.*

In regard to the kind of cases, and the particular circumstances under which blisters are useful, I have little to add to what has been already stated in different parts of these notes. It is in well marked head symptoms with a decided tendency to stupor, after adequate leeching, that the use of blisters to the nape of the neck; and, if still further required, to the shaven scalp, is often of very great use; and I have seen more recov-

eries from very unfavourable symptoms of this kind, under the use of blisters, than by any other means,—and such instances have chiefly occurred in youthful subjects.

### *Emetics.*

The utility of emetics in the early stages of fever, and the circumstances for which they are chiefly suitable, have been already explained, and I would here chiefly allude to a manner of giving ipecacuanha as an emetic which I first saw practised by Dr. French, now of H. M.'s 49th Regiment, but at the time (1832) to which I allude, in medical charge of the 4th Light Dragoons, which I have on occasions followed, and which I conceive to be well suited for particular cases, — that of combining x. or xv. grains of ipecacuanha with grains x. of calomel, and following it, after two or three hours, by a purgative. This combination very generally causes vomiting, and it is assumed that the calomel is retained by being entangled in the mucus of the stomach. The advantage obtained, is, that in cases in which an emetic, a mercurial and a purgative are expedient as initiatory proceedings, there is a gain in point of time, by combining the mercurial with the ipecacuanha. The kind of case for which it seems to me that this treatment is suited, is that in which the tongue is expanded, thickly coated, without floridity of tip or edges, and unattended with tension or tenderness of the epigastrium. But cases exactly answering to this description are not very frequent in Bombay, for more generally in the slighter attacks the tongue is expanded, white and thinly coated, and in these the ipecacuanha alone, as an emetic, followed after some hours at bed time by two or three grains of calomel with antimonial powder or blue pill with ipecacuanha, followed the next morning by a mild purgative, will be found sufficient.

It may be no doubt admitted that in these cases the combination of ipecacuanha and calomel would effect the object in view,—but in the use of calomel it has always seemed to me a sound principle, not to give one grain more than in one's judgment is adequate to carry out the indication of cure, " tuto, cito, et jucunde,"— and not to give it at all, unless to fulfil a distinct indication.

Then there are the other severe cases in which the tongue is more coated but not so expanded, and in which the tip and edges are florid and the epigastrium uneasy on pressure. In these, though a free dose of calomel is in many instances fairly indicated, the emetic is contra-indicated, and the calomel ought very frequently to be preceded by the application, to

the epigastrium, of leeches, a sinapism or blister according to the period of the disease. It is on these grounds, though thinking favourably of the above combination, that I have not often found it necessary to have recourse to it in Bombay.

The treatment of fevers by an emeto-purgative mixture, of tartar emetic and epsom salts in doses frequently repeated, to the causing of free vomiting and purging, is quite unsuited to the treatment of fever as occurring in Bombay, and I am certain could not be generally adopted as a routine system of practice without great hazard. In fact, even in the quotidian or ephemeral fevers of more phlogistic type, as occurring in the Deccan at the commencement of the monsoon, and in a well conditioned body of men, I have witnessed an alarming state of collapse resembling cholera caused by this mode of treatment. It is not disputed that many cases of fever thus managed do very well, but they must be selected with care, for I believe that there never occurs an epidemic of tropical fever, in which there are not many for whom this kind of treatment is not only unsuited, but also hazardous.

*On the use of Calomel and other mercurials.*

I have already stated that in the early days of remittent fever, when the tongue is coated, the abdominal secretions vitiated and scanty, and the abdomen rather full and resisting,—that then calomel, in doses from ten to four grains variously combined, according to circumstances, given at bed time, and followed on the succeeding morning by a purgative, more or less active according to the peculiarities of individual cases, and repeated according to circumstances, forms an important part of the treatment; and that afterwards, as the abdomen becomes supple, the tongue cleans and the secretions right themselves, blue pill or hydrargyrum c. cret. is quite sufficient to perfect the recovery.

The practice, at one time too common, of exhibiting calomel in doses of four or five grains, three or four times in the course of the day, without any very definite object in view, and continuing it for a succession of days, cannot I think be too strongly discouraged,—for not only is it unnecessary, but in my opinion often positively injurious, and that for the following reasons. In watching the progress of cases thus treated, it is not I think difficult to detect a train of symptoms much more fairly attributable to the treatment than to the disease, because it is in cases thus treated that such is chiefly observed. The symptoms to which I allude are, uneasy feelings sometimes amounting to pain with a sense of

oppression or sinking at the epigastrium, and occasionally griping of the abdomen, for which leeches are not unfrequently applied, and purgatives unnecessarily given. The frequent repetition of the calomel keeps up also a foul state of the tongue, nausea and irritability of stomach, aggravates the febrile excitement, and produces an irritable state of the bowels, marked by frequent watery discharges, The convalescence moreover of cases thus treated is always tedious and frequently complicated with diarrhœa, and clay coloured dejections.

The question of the propriety of making, in all bad cases of remittent fever, strenuous efforts to induce the constitutional effect of mercury, and to insist on ptyalism being caused in proof thereof, would, not many years ago, have formed a prominent feature in any disquisition relating to tropical fevers. But it may, I trust, be assumed, that the necessity for discussing this question has passed away, and that the common belief (in a great measure attributable to the judicious writings of the late Mr. Twining) now is, that an attempt to check febrile excitement, such as evolves itself in tropical remittent fever, by the rapid induction of ptyalism is perfectly futile. And that even were it practicable to induce the full constitutional effect of mercury during the persistence of an active febrile state of the system, there is no evidence to shew that such effect would tend in the least degree to lessen that excitement: — on the contrary, all analogy is opposed to it.

It is very true that the cessation of febrile excitement and the occurrence of ptyalism have frequently been observed as nearly coincident events. But, is there room for doubt that in such cases the evolvement of the mercurial action is the sequence of the cessation of the pyrexial symptoms ?—perhaps on no point of practice, is the evidence, if looked for, more open to observation. It is by no means an unusual circumstance in the course of remittent fevers which, in their early stages, have required the exhibition of several full doses of calomel, to observe, after the recurrence of the fever has been prevented by quinine, a slight mercurial action to appear on the 2nd or 3rd day, though not more than a few grains of calomel or blue pill in combination with quinine had been given during these days. Under these circumstances the relation of the events is so apparent and so expressive, that the question of which is antecedent and which sequence is no longer open for argument; and surely in other instances in which the only difference is that there has been no agency employed of acknowledged power to prevent the recurrence of the accession of fever, we ought to recollect the na-

tural tendency of the disease to remit, and after a time to cease,—and certainly ought not to take up the illogical position of attempting to account for the same coincident phenomena by altogether reversing the order of causation.

Though believing that endeavours to induce mercurial action, as a general rule in the treatment of these fevers, is not only inexpedient but very commonly injurious, I am perfectly willing to admit that cases occasionally occur in which, owing to a complication of certain local inflammatory actions, generally of the brain or its membranes, it is of consequence when practicable to affect the system with mercury. Whilst concurring in this view I am however of opinion that in cases of remittent fever exhibiting well marked head symptoms, there is room for the exercise of considerable discrimination, before entering on this course of treatment; for though there are cases characterized by such symptoms, in which at particular stages it is a fair indication of cure to attempt the induction of the mercurial action,—there are also others with similar symptoms, in which, from the co-existence of other conditions, the mercurial action is not only inexpedient but contra-indicated.

This observation, if just, is undoubtedly of much importance, and I shall attempt to explain what has seemed to me the correct principle of distinction.

When in cases of remittent fever, in the first week or so of the attack, in subjects of good habit, head symptoms do not yield to the usual course of treatment, but persist more or less during the remission and give reason to apprehend that subacute meningitis is going on, likely to terminate in effusion of patches of lymph on the surface of the pia mater, or in thickening of the arachnoid membrane — the pulse remaining of moderate volume, the tongue continuing moist, there being no typhoid symptoms present and no indications of much gastro-enteric irritation.—Under these circumstances, generally co-existing in youthful subjects, I should consider it good practice to exhibit repeated small doses of calomel, and use mercurial inunction, with the view of affecting the system,—and this exactly on the principle, on which the mercurial action is thought to be expedient in idiopathic arachnitis, pericarditis, iritis, hepatitis, swelled testicle, &c. —an assumed incompatibility of the mercurial action, and a condition of the blood admitting of the effusion of organizable lymph.

But in the cases in which head symptoms, possibly not differing much from the others in character, come on or persist in association with the usual typhoid signs, and such are generally evolved in instances of more

protracted fever. Under these circumstances, I should anticipate harm from all active attempts to induce the constitutional effect of mercury,—believing that the existing state of the brain is different, — in this the functions failing in association with the functions of other organs—the effect of the action of the remote cause and of the continuance of the febrile excitement,—in the other in consequence of the local changes of structure resulting from the inflammatory action.

The evidences of this difference are the more protracted course of the disease, and the fact that, in the examination after death, there is generally little if any morbid change found. There may indeed be a slightly encreased effusion of serum or a higher vascularity of the membranes, but it is a question how far such appearances, under these circumstances, are to be considered morbid, and, even admitting them to be so, there is no good reason for believing that such changes are likely to be benefited by the induction of mercurial action.

There are also cases with head symptoms—delirium, tendency to drowsiness—coming on early in fevers of a bad type, towards the end of the paroxysm, associated with signs of general collapse dependent on enfeebled nervous energy, which do not call for the use of calomel or other mercurials, but rather stimulants external and internal.

When the head symptoms are such as may fairly be attributed to sub-acute meningitis, but are accompanied with well marked signs of gastro-enteritis—tongue with florid tip and edges, more or less irritability of stomach, diarrhœa with some tension of abdomen—then the case is very perplexing. The state of the mucous membrane contra-indicates the use of calomel without opium, and even with opium, except in very small doses; and the head symptoms contra-indicate the use of opium. The best course to pursue in these cases, is, I think, to treat the gastro-enteritic irritation and the head symptoms, on general principles, and restrict the attempt at mercurialization to the use of hydrargyrum. c. creta and inunction.

I have confined my remarks, on the expediency of inducing mercurial action in remittent fever to cases complicated with meningitis, because it is the most frequent complication which calls for that measure. I can however readily conceive the occurrence of cases of fever, complicated with distinct hepatitis, which might also render it expedient to affect the system with mercury. These are however, judging from my own experience, rare, for I do not allude to cases, by no means uncommon, of a sense of weight and uneasiness of the right side, and the epigastrium, probably dependent on

congestion of the vessels concerned in the secretory function of the liver.

*On the use of Purgatives.*

Of the necessity of the moderate use of purgatives, more or less active according to the circumstances of particular cases, there is no doubt,—but at the same time, the bad effect of keeping up a constant state of irritation of the bowels by inducing frequent watery dejections is equally apparent.

After the first two or three days, if the secretions dependent directly or indirectly on the portal system have been freely solicited, and the risk of stagnation of the portal circulation, thus in a manner provided against, there can be no necessity for further purging. It will be sufficient that the bowels be moved twice gently in the course of 24 hours,—for the effect of the opposite and too common practice is to irritate the mucous linings; and, in protracted cases, to hurry on and very much aggravate the typhoid symptoms; and in cases of recovery to leave, during the state of convalescence, bowels with difficulty brought to act in a natural way; and lastly to create a most decided proclivity to attacks of dysentery very likely to be excited, if the approach of the cold season finds the patient feeble, reduced, and still in a state of convalescence.

As elsewhere stated, the tendency of a lengthened convalescence, merely from the condition of co-existing debility, always predisposes to inflammatory attacks, when the exciting causes of inflammation are rife. But under the circumstances now adverted to, we have, in addition, those very organs principally enfeebled which of all others are liable to inflammatory attacks in the cold season in Bombay.

There is also room for caution in the use of purgatives in intermittent fevers of long standing, for in one or two instances, I have witnessed the confirmation of the following remark recorded by CULLEN. "But I can say that Sydenham and many other practitioners have observed that we are in danger of bringing back intermittent fevers, if we employ purgative medicines soon after we have stopped them with bark; and we have the same observation in De Haen. * "

*On the use of Opiates.*

In my remarks on the treatment of remittent fever I have endeavoured to explain the circumstances in which an opiate has seemed to me to act with advantage, and also the precautions which should be kept in view at the time of its exhibition.

* The works of Cullen edited by John Thomson, M. D. Vol. 1. p 642.

There are however other circumstances in some respects analogous, but in which a full dose of opium cannot be given without much hazard. — I allude to its use after a lengthened period of restlessness, but in which the skin is not steadily warm or is rather coldish, and in which the pulse is frequent and feeble. This state obtains either in cases which have been for some time protracted, or at the end of a paroxysm characterized by much collapse. These symptoms indicate that the nervous influence over the organs of circulation is failing, and the sedative action of a full opiate, under these circumstances, is apt, as I have in one or two instances witnessed, to increase the state of collapse, to mask the degree to which it exists, to hurry on coma and expedite the fatal termination.

Under these circumstances, instead of an opiate, stimulants should be given in the first instance,and it is possible enough that after, under their use, the pulse has for some time been kept steadily raised, and the delirium lessened,—that then occasionally a full opiate may be administered with advantage. But on this particular point, I express myself with diffidence and rather state what seems to me a fair inference than what I have actually observed successfully applied in practice.

*On the use of Quinine.*

From what has already been stated, in different parts of these notes, on the mode of using this remedy in intermittent and remittent fever,— it will be observed, that the conclusions at which I have arrived differ very little from the rules laid down by * CULLEN : these are :—

1. † "That the bark may be employed with safety at any period of intermittent fevers, providing that, at the same time, there be neither a phlogistic diathesis prevailing in the system, nor any considerable or fixed congestion present in the abdominal viscera.

2. The proper time for exhibiting the bark in intermittent fevers, is during the time of intermission, and where intermissions are to be expected, it is to be abstained from in the time of paroxysms.

3. In remittents though no entire apyrexia occurs, the bark may be given during the remissions ; and it should be given, even though the remissions be inconsiderable, if, from the known nature of the epidemic, intermissions or considerable remissions are not to be so soon expected, and that great danger apprehended from repeated exacerbations.

* Thomson's Edition, Vol. 1. p 673.

† This first rule is I have no doubt very accurate when applied to the bark in substance, but I do not think that the phlogistic diathesis or the presence of fixed congestion are, of necessity, contra-indications of the use of quinine. This is a very important and nice point of practice.

4. In the case of genuine intermittents, while a due quantity of bark is to be employed, the exhibition of it ought to be brought as near to the time of accession, as the condition of the patient's stomach will allow.

5. In general, in all cases of intermittents, it is not sufficient that the recurrence of paroxysms be stopped for once by the use of the bark; a relapse is commonly to be expected, and should be prevented by the exhibition of the bark, repeated at proper intervals."

The only remark, additional to those already made, to which I am induced to allude, is, that we are frequently, it is feared, when using quinine in remittent fever, induced to intermit the remedy because a febrile exacerbation may have followed after its use in the first or second remission, under the apprehension that the febrile excitement has been increased by the remedy; and this we are the more inclined to suspect, if there be well marked head symptoms present during the exacerbation. Now in judging thus, we should reflect that the natural tendency of the fever, for a time, is to recur after a remission and that in severe cases there is even a tendency to assume the continued form, that the action of the quinine is to lengthen the period of intermission or remission, or to prevent its recurrence; and consequently that it is a more logical inference, in instances of failure, to assume that had the quinine not been given, the exacerbation would have been more severe and have come on earlier.

In suggesting this explanation it is not my wish to affirm that there may not be cases, apparently suitable, in which the quinine acts unfavourably; but merely to propose a reflection not altogether unimportant in determining the particular instances.

### *On change of Air, &c.*

Of the advantage to be derived by the removal of persons, suffering from confirmed intermittent fever, from the malarious districts in which the disease may have been acquired to a locality more salubrious, there can be no manner of doubt. Of the efficacy of such a measure, the cases admitted into the General Hospital from the river Indus, the Persian Gulf and the late expediton to China, have in many instances afforded very clear evidence,—a fact which, in estimating the success of the hospital treatment, ought to be kept very distinctly in view.

The question however of whether in cases of remittent fever, it is expedient to move the patient before the stage of convalescence has commenced, is quite distinct, and is one which never arises in hospital practice, and consequently does not fall within the scope of these notes.

This latter circumstance however, would not have restrained me from

entering upon the discussion of a question so very important, had opportunity and time, at present, permitted me to do so with any prospect of advantage. It is indeed of very great consequence that medical opinion on this particular question (as well as on others relating to change of air, and climate) should be more matured than at present. For without at all affirming that circumstances may not occasionally arise in which it may be expedient to move the patient, while actually suffering from serious febrile excitement, I have no hesitation in expressing a very decided conviction, that the measure is often injurious and hazardous, and not unfrequently, it is apprehended, carried into effect in deference to the popular delusion that change of air is a universal panacea suited to all diseases, and all stages of disease.

1

*Tabular statement of the admissions and deaths from Fever of all kinds in the European General Hospital at Bombay for the five years, from July* 1838 *to July* 1843, *with per centage of deaths on admissions; of admissions on total Hospital admissions; and of deaths on total Hospital deaths, for the same period.*

| | 1838. | | 1839. | | 1840. | | 1841. | | 1842. | | 1843. | | Total, | | Monthly average of the five years. | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Admissions. | Deaths. | Admissions. | Deaths. | Admissions. | Deaths. | Admissions. | Deaths. | Admissions. | Deaths. | Admissions. | Deaths. | Admissions. | Deaths. | Deaths on admission. | Admissions on total admission. | Deaths on total deaths. |
| January | " | " | 11 | " | 16 | " | 23 | 2 | 22 | " | 33 | 3 | 105 | 5 | 4.7 | 19.1 | 11.5 |
| February | " | " | 7 | " | 10 | 1 | 5 | " | 10 | " | 23 | 1 | 55 | 2 | 3.6 | 13.3 | 6.2 |
| March | " | " | 5 | " | 15 | " | 6 | 1 | 22 | 2 | 26 | " | 74 | 3 | 4. | 14.5 | 9. |
| April | " | " | 17 | 1 | 17 | " | 8 | 1 | 31 | 1 | 15 | 2 | 88 | 5 | 5.6 | 15.1 | 12.1 |
| May | " | " | 37 | 1 | 26 | " | 19 | " | 37 | 1 | 35 | 1 | 154 | 3 | 1.9 | 17.9 | 3.7 |
| June | " | " | 56 | " | 24 | 1 | 48 | 3 | 47 | 1 | 44 | 1 | 219 | 6 | 2.7 | 28.4 | 11.7 |
| July | 16 | 1 | 28 | " | 33 | 1 | 67 | 5 | 75 | " | " | " | 219 | 7 | 3.1 | 30.5 | 18.9 |
| August | 17 | " | 50 | " | 25 | 1 | 47 | 7 | 40 | " | " | " | 179 | 8 | 4.4 | 29.3 | 22.8 |
| September | 26 | " | 28 | 3 | 22 | 1 | 35 | 1 | 30 | 3 | " | " | 141 | 8 | 5.6 | 25.8 | 15.3 |
| October | 23 | 1 | 66 | 1 | 26 | " | 143 | 3 | 60 | 1 | " | " | 318 | 6 | 1.8 | 44. | 22.2 |
| November | 12 | " | 48 | 1 | 43 | 2 | 32 | " | 58 | 2 | " | " | 193 | 5 | 2,5 | 28.1 | 10.6 |
| December | 8 | " | 16 | 4 | 14 | " | 28 | " | 28 | 4 | " | " | 94 | 8 | 8.5 | 15.3 | 12.1 |
| Total | 102 | 2 | 369 | 11 | 271 | 7 | 461 | 23 | 460 | 15 | 176 | 8 | 1839 | 66 | 3.5 | 24.2 | 12.1 |
| Per centage of deaths on annual admission. | 1.9 | | 2.9 | | 2.5 | | 4.9 | | 3.2 | | 4.5 | | | | | | |
| Per centage of admissions from fever on total Hospital admission. | 23.8 | | 27.4 | | 20.1 | | 31.3 | | 22.3 | | 18.7 | | | | | | |
| per centage of deaths from fever on total annual Hospital deaths. | 6.9 | | 12.9 | | 6.6 | | 20.7 | | 9.6 | | 16. | | | | | | |

2

*Tabular statement of admissions and deaths from Intermittent Fever in the European General Hospital at Bombay for the five years, from July* 1838 *to July* 1843, *with per centage of deaths on admissions ; of admissions on total admissions from Fever ; of deaths on total deaths from fever, for the same period.*

| | 1838. | | 1839. | | 1840 | | 1841. | | 1842. | | 1843. | | Total. | | Monthly average of five years. | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Admissions. | Deaths. | Admissions. | Deaths. | Admissions. | Deaths. | Admissions. | Deaths. | Admissions. | Deaths. | Admissions. | Deaths. | Admissions. | Deaths. | Deaths per cent of admissions. | Admissions per-cent of total fevers. | Deaths per cent of total Fever deaths. | |
| January | " | " | 8 | " | 12 | " | 20 | " | 19 | " | 31 | 1 | 90 | 1 | 1.1 | 85.2 | 20. | |
| February | " | " | 4 | " | 7 | " | 5 | " | 10 | " | 22 | 1 | 48 | 1 | 2. | 37.2 | 50. | |
| March | " | " | 3 | " | 14 | " | 6 | 1 | 20 | 1 | 24 | " | 67 | 2 | 2.9 | 90.5 | 66.6 | |
| April | " | " | 9 | " | 12 | " | 7 | " | 27 | " | 14 | 2 | 69 | 2 | 2.9 | 78.2 | 40. | |
| May | " | " | 27 | " | 17 | " | 19 | " | 33 | " | 34 | 1 | 130 | 1 | 0.7 | 84.4 | 33.3 | |
| June | " | " | 54 | " | 19 | " | 31 | 1 | 45 | " | 43 | " | 192 | 1 | 0.5 | 87.2 | 16.6 | |
| July | 10 | " | 26 | " | 29 | 1 | 13 | " | 66 | " | " | " | 144 | 1 | 0 6 | 65.7 | 14.2 | |
| August | 13 | " | 41 | " | 22 | " | 18 | " | 36 | " | " | " | 130 | " | " " | 72.6 | " " | |
| September | 16 | " | 16 | 1 | 19 | " | 29 | " | 27 | 1 | " | " | 107 | 2 | 1.8 | 75.8 | 25. | |
| October | 18 | " | 47 | " | 21 | " | 140 | 2 | 59 | 1 | " | " | 285 | 3 | 1. | 89.6 | 50. | |
| November | 7 | " | 40 | " | 27 | " | 32 | " | 54 | " | " | " | 160 | " | " " | 82.9 | " " | |
| December | 6 | " | 11 | 1 | 12 | " | 27 | " | 25 | 3 | " | " | 81 | 4 | 4.9 | 85.1 | 50. | |
| Total | 70 | " | 286 | 2 | 211 | 1 | 347 | 4 | 421 | 6 | 168 | 5 | 1503 | 18 | 1. 1 | 81.6 | 27.2 | annual average. |
| Deaths per cent of annual admissions. | " | | 0.7 | | 0.4 | | 1. | | 1.4 | | 2.9 | | | | | | | |
| Admissions per cent of total annual admissions from fever. | 68.6 | | 77.2 | | 77.8 | | 75.2 | | 91.5 | | 95.4 | | | | | | | |
| Deaths per cent of total annual deaths from fever. | " | | 18.1. | | 14.2 | | 17.3 | | 40. | | 62.4 | | | | | | | |

3

*Tabular statement of admissions and deaths from Remittent Fever in the European General Hospital at Bombay for the five years, from July* 1838 *to July* 1843, *with per centage of deaths on admissions; of admissions on total admissions from Fever; of deaths from total deaths from Fever for the same period.*

| | 1838. | | 1839. | | 1840. | | 1841. | | 1842. | | 1843. | | Total. | | Monthly average for the five years. | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Admissions. | Deaths. | Admissions. | Deaths. | Admissions. | Deaths. | Admissions. | Deaths. | Admissions. | Deaths. | Admissions. | Deaths. | Admissions. | Deaths. | Deaths per cent of admissions. | Admissions per cent of total fevers. | Deaths per cent of total deaths from fever. | |
| January | " | " | 3 | " | 4 | " | 3 | 2 | 3 | " | 2 | 2 | 15 | 4 | 26.6 | 14.1 | 80. | |
| February | " | " | 3 | " | 3 | 1 | " | " | " | " | 1 | " | 7 | 1 | 14.2 | 12.7 | 50. | |
| March | " | " | 2 | " | | " | " | " | 2 | 1 | 2 | " | 7 | 1 | 14.2 | 9.4 | 33.3 | |
| April | " | " | 8 | 1 | 1 | " | 1 | 1 | 4 | 1 | 1 | " | 19 | 3 | 15.7 | 21.5 | 60. | |
| May | " | " | 10 | 1 | 9 | " | " | " | 4 | 1 | 1 | " | 24 | 2 | 8.3 | 15.5 | 66.6 | |
| June | " | " | 2 | " | 5 | 1 | 17 | 2 | 2 | 1 | 1 | 1 | 27 | 5 | 18.5 | 12.3 | 83.3 | |
| July | 6 | 1 | 2 | " | 4 | " | 54 | 5 | 9 | " | " | " | 75 | 6 | 8.0 | 34.7 | 85.7 | |
| August | 4 | " | 9 | " | 3 | 1 | 29 | 7 | 4 | " | " | " | 49 | 8 | 16.3 | 27.3 | 100. | |
| September | 10 | " | 12 | 2 | 3 | 1 | 6 | 1 | 3 | 2 | " | " | 34 | 6 | 17.6 | 24.1 | 75. | |
| October | 5 | 1 | 19 | 1 | 5 | " | 3 | 1 | " | " | " | " | 33 | 3 | 9.0 | 10.3 | 50. | |
| November | 5 | " | 8 | 1 | 16 | 2 | " | " | 4 | 2 | " | " | 33 | 5 | 15.1 | 17. | 100. | |
| December | 2 | " | 5 | 3 | 2 | " | 1 | " | 3 | 1 | " | " | 13 | 4 | 30.0 | 13.7 | 50. | |
| Total | 32 | 2 | 83 | 9 | 60 | 6 | 114 | 19 | 39 | 9 | 8 | 3 | 336 | 48 | 14.2 | 17.6 | 72.7 | annual average. |
| Deaths per cent of annual admissions. | 6.2 | | 10.8 | | 10. | | 16.6 | | 23. | | 37,5 | | | | | | | |
| Admissions per cent of total annual admissions of fever. | 31.3 | | 22.4 | | 22.1 | | 24.5 | | 8.4 | | 4.5 | | | | | | | |
| Deaths per cent of total annual deaths from fever. | 100 | | 81.8 | | 85.7 | | 82.6 | | 60. | | 37.5 | | | | | | | |

*Tabular statement of admissions from Ephemeral Fever in the European General Hospital at Bombay for the five years, from July 1838 to July 1843, with per centage of admissions on admissions from Intermittent Fever.*

| | 1838. | | 1839. | | 1840. | | 1841. | | 1842. | | 1843. | | Total. | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Admissions. | Deaths. | Admissions. | Deaths. | Admissions. | Deaths. | Admissions. | Deaths. | Admissions. | Deaths. | Admissions | Deaths. | Admissions. | Deaths. | Admissions per cent of admissions, from Intermittent Fever. |
| January | " | " | 1 | " | 7 | " | 3 | " | 1 | " | 1 | " | 13 | " | 14.4 |
| February | " | " | " | " | 4 | " | 1 | " | " | " | " | " | 5 | " | 10.4 |
| March | " | " | 1 | " | 6 | " | " | " | " | " | 1 | " | 8 | " | 11.9 |
| April | " | " | 2 | " | 5 | " | " | " | " | " | 2 | " | 9 | " | 13. |
| May | " | " | 3 | " | 12 | " | 1 | " | 1 | " | 4 | " | 21 | " | 16.1 |
| June | " | " | 10 | " | 4 | " | " | " | 9 | " | " | " | 23 | " | 11.9 |
| July | 1 | " | 5 | " | 2 | " | " | " | " | " | " | " | 8 | " | 5.5 |
| August | 2 | " | 8 | " | 3 | " | 1 | " | 3 | " | " | " | 17 | " | 13. |
| September | 3 | " | 3 | " | 5 | " | 4 | " | " | " | " | " | 15 | " | 14. |
| October | 1 | " | 16 | " | 4 | " | 2 | " | " | " | " | " | 23 | " | 8. |
| November | " | " | 6 | " | 2 | " | " | " | 1 | " | " | " | 9 | " | 5.6 |
| December | 1 | " | 1 | " | " | " | 1 | " | 5 | " | " | " | 8 | " | 9.8 |
| Total | 8 | " | 56 | " | 54 | " | 13 | " | 20 | " | 8 | " | 159 | " | 10.5 |
| Admissions per cent of annual admissions from Intermittent Fever. | 11.4 | | 19 5 | | 25.6 | | 3.7 | | 4.7 | | 4.7 | | | | |

N. B. The object of this table is to correct No. 3. The admissions of Ephemeral Fever are entered under that title in the Hospital Register, but in the official Return, there not being any such title, they are entered under the head Intermittent Fever. Table No. 3, is made out from the official Returns consequently to make it accurate, it should be corrected by deducting from its numbers the numbers in this table. This I have not done in the table itself, in order that it may accord with the hospital records. I have thought it better to supply the data for correction in a separate table.

## Article IX.

### *An enquiry into the evidence which is recorded, in relation to the Influence of the Lunar Changes upon certain forms of Disease* By J. Peet, Esq.

Presented November, 1843.

The effect of planetary influence, in modifying the symptoms of various forms of disease, has long attracted the attention of practitioners residing in tropical climates; but I am not aware that any attempt has been made, of late years, to bring the subject in a connected form before the profession.

My object, in the following paper, is to undertake the arrangement of the facts and opinions which have been recorded, with the view of endeavouring to ascertain the amount of confidence which may be safely placed in the accuracy of the doctrine.

From the most remote periods, popular opinion has ascribed to the moon very considerable power upon the human frame, both in a state of health and disease; * thus allusion to its deleterious influence may be found in the sacred writings, and the older authors upon medicine have not unfrequently noticed its supposed effect in modifying certain diseases. †

Hippocrates believed that the "Falling Sickness," and insanity were due to the influence of the moon; and Galen directly affirms that all diseases, and particularly fevers, are subjected to it. It is worthy of remark, that although Hippocrates was the founder of the doctrine of critical days in fevers, he does not appear to have acknowledged the effect of the moon upon these complaints.

* Psalm cxxi.

† In the translation of an old Hindoo work called Susruta, or system of medicine taught by Dharwantari, published at Calcutta in 1835, and referred to in Pereira's Materia Medica; amongst the remedial agents, therein mentioned, are gold, silver, the metals, and the *increase and decrease* of the moon's age.

It is not my intention to trace minutely the history of the subject, anterior to the time when the question was revived by Dr. Mead in the year 1704. It may be, however, mentioned that reference is made to it in the works of many of the writers of the middle centuries. * Few facts were brought forward, and the information is chiefly valuable, in shewing that the subject had excited attention at those periods.

From the close of the 17th century, the question appears to have been but little discussed, until after the Newtonian discovery of universal attraction, at which time Dr. Mead endeavoured to bring it again under notice ; † he was followed by Dr. Darwin, ‡ and in the year 1768, Dr. Lind, for the first time, called attention to it, as a doctrine capable of direct proof in the fevers occurring in tropical countries. §

‖ It must be stated, however, that Dr. Grainger, who served with the army in the Netherlands in the year 1746, had previously mentioned a fact which has been considered of some importance, viz. that 20 men of the Regiment of which he had charge were seized with intermittent fever which was then epidemic, upon the occurrence of a solar eclipse ¶

Dr. Lind's treatise was followed, shortly afterwards, by a publica-

* For a good deal of information connected with the early history of the subject of "Lunar Influence," I am indebted to a Thesis by Dr. Coldstream, written in 1827. Vide Disputatio Medica inauguralis de indole Morborum periodica, utpote siderибus orta. Par Johannes Coldstream, Edinburgi, MDCCCXXVII.

† Mason Good's Study of the Theory and Practice of Medicine, 4th edition by S. Cooper, pp. 593.

‡ Zoonomia, pp. 376, 455.

§ This was published in the form of an Inaugural Dissertation at Edinburgh. I regret much, that I have not been able to procure it here.

‖ Dr. Jackson on the Fevers of Jamaica, 1791.

¶ It may be here mentioned, that eclipses were at all times supposed to have a particular influence upon the animal economy. Ramazzini states, in describing a fever, which prevailed at Modena, that upon the 21st of January 1693, an eclipse of the moon having occurred, the greater number of the sick died. Dr. Lind also says, that during an eclipse of the sun, Nov. 15th 1762, "there died 800 Europeans, 30,000 blacks in one day ; those who were well, fell sick ; those who were sick, grew worse ; and those who were convalescent, relapsed, under its malignant influence. This is given on the authority of Dr. Goodeve. Vide Appendix to the Transactions of the Medical and Physical Society of Calcutta. vol. viii part ii pp. cxxiii.

tion of Dr. Balfour's, written expressly upon the influence of the moon in fever. *

In the year 1791 Dr. Jackson examined the subject with some attention, and he has adduced a good many facts in support of the doctrine. The result of his investigations, however, shows a remarkable difference, as to the period of the moon, when the influence is manifested, when compared with the conclusions on this point, arrived at by Dr. Balfour. † This discrepancy will be more particularly referred to hereafter.

Since the publication of Dr. Jackson's work, the subject has been incidentally mentioned by most writers upon tropical diseases. In the year 1827, it was ably and fully discussed in a Thesis by Dr. Coldstream; the early history is here collected with great research, — and I take this opportunity of mentioning, that I have freely availed myself of much of the information it contains.

In arranging the evidence, bearing upon the question, I propose to consider it under two heads viz. direct and indirect influence.

1st.

*I Direct Influence.*

The most remarkable effects are supposed by Sailors to follow sleeping exposed to the moon's rays, such as nyctalopia, paralysis, and swelling of the face, vertigo, &c. So common, indeed, is this belief that a Sailor is seldom met with, who does not relate instances which he has himself seen.

Few authenticated circumstances connected with this point are, however, recorded, but the few which are to be found, appear to confirm some of these assertions. In the Nautical Magazine for December 1839, a correspondent states, that he has seen the newly littered young perish in a few hours by the mother's side, if exposed to the rays of the full moon. By the same writer, it is mentioned, that fish become rapidly putrid, as well as meat, if left exposed for a short time ; and further, he says, " Mariners heedlessly sleeping on deck, are at times quickly affected with night blindness, and the face becomes hideously swollen."

The occurrence of these phenomena is referred to by Mr. Thompson

* A Treatise on the Influence of the Moon in Fevers by Francis Balfour, M. D. Calcutta, 1784. I have not been able to see this work.

† Fevers of Jamaica.

in the Medical Gazette for February 24th 1843, and an attempt is made to explain their appearance in a manner totally independent of any direct, or noxious influence, in the moon's rays.

Mr. Thompson who served in the H. C. Marine Survey Departments on the Bengal establishment, admits the facts, that persons sleeping on the deck of a vessel on clear moonlight nights, are often affected with night blindness, paralysis in some part of the body, and congestion of an internal organ ; but he thinks these effects are due, not to any inherent noxious quality in the rays of the moon, but to the rapid abstraction of heat, which takes place from all exposed bodies on clear moonlight nights, as well as to the increased quantity of moisture, in the form of dew, contained in the atmosphere at those times. The same kind of reasoning is adopted by Mr. Berncastle, in the Medical Gazette of the 31st March 1843. This Gentleman, however, denies the truth of the assertion, that dead animal matter is decomposed by exposure to the moon's rays. He hung up two pieces of meat, one exposed to the direct influence of the moon, the other was kept in the shade. On the following day, both pieces presented precisely the same appearance. This experiment would have been more satisfactory if the kind of night had been mentioned with respect to its being cloudy, or otherwise, the height of the thermometer, and whether dew was deposited.

Before I had seen Mr. Berncastle's paper, I had made an experiment of a similar kind. Upon two successive nights, in July of this year, whilst the vessel lay at Aden, I suspended two pieces of mutton, one exposed to the moon, the other hung in a cloth. On the first occasion, (upon examination the following morning), there was no perceptible difference between the pieces ; on the second, the exposed piece appeared rather tainted. But there was this distinction, the two pieces hung up on the first night, were lean, whilst the exposed piece or the second night, was remarkably fat. The moon was in her 13th and 14th days; the first night was clear, the second cloudy ; there was but little dew ; Thermometer about 85° Fahr. These experiments would appear to confirm Mr. Berncastle's statement ; but I am informed by an intelligent Commander, in the Indian Navy, that in the Persian Gulf he has not unfrequently seen meat destroyed by exposure to the moon, and I am also told by the same officer, that he has observed sailors, with their faces much swollen, after sleeping upon deck in a bright moonlight night. It may be, therefore, that the direct influence of the moon is more marked in certain localities.

With respect to the assertion that fish rapidly decompose under the moon's rays, I think there can be no doubt of its truth. I have frequently seen fish caught, and in fact, have caught them myself upon moonlight nights, which, after being exposed for a few hours in the bottom of the boat, have been found to be entirely unfit for use. *

It is now necessary, to refer to the explanation given by Messrs. Thompson and Berncastle. This explanation is evidently founded upon the assumption, that there is a greater abstraction of heat, and consequently a larger deposit of dew, upon moonlight, than other clear nights; or in other words, that the moon has the power of increasing the radiation of heat from the earth. It will presently appear, how far this hypothesis is supported by facts.

Dr. Howard, who carefully investigated the effect of the moon upon the atmosphere, published the result of an experiment which seemed to prove, that this luminary had the power of radiating heat to the earth. † If the influence deduced from this experiment were correct, it would be altogether opposed to the theory under consideration, as it must necessarily follow, if heat be radiated from the moon, there will be a diminished abstraction from the earth, and from bodies lying on it; and as a consequence, other things being equal, dew will be formed in less quantity, than upon clear nights when the moon is small.

‡ The researches of Professor Daniell, however, tend to show that Dr. Howard was in error, and that, in fact, there is no radiation from the moon. But there is not the slightest allusion in any part of his work, to its possessing the power of increasing the amount of radiation from the earth, which must be proved before we can admit the assertion of the greater formation of dew on moonlight nights. Moreover, common experience would, I think, lead us to believe that dew is deposited in as large a quantity when the nights are dark, as when the moon is at the full, provided, of course, that in each case the sky be equally free from clouds. If, therefore, it be acknowledged, that the abstraction of heat and formation of dew are as copious upon clear nights which are not moonlight, as upon

* In Dr. Lind's work on Hot Climates, there is the following remark, in connexion with this point. "Fish are so apt to corrupt in Tropical Climates, even during the coolness of the night air, that it is a prevalent opinion amongst the fisherman, the moon has a quick and powerful influence in spoiling them." Vide Lind on Hot Climates, pp. 593.

† Daniell's Meteorological Essays and Observations, p. 244.

‡ Oper Cit. pp. 245.

those which are, and that the phenomena which have been mentioned, are only observed when the individuals are exposed to the moon's rays, the obvious conclusion must be that this theory is not sufficient to account for their occurrence. Admitting however, the reverse of all this to be the case, an argument, and not a slight one, might justly be founded upon the impossibility of understanding the "modus operandi" of these causes, in occasioning the effects which have been noticed. The cold produced by a rapid abstraction of heat and by a deposit of aqueous moisture, might easily be imagined to act as a powerful exciting cause of inflammation, fevers, &c. but it would be extremely difficult to conceive how it could operate in giving rise to such affections, as paralysis and night blindness, &c. If this statement were correct, we ought to find numerous instances of these diseases traceable to exposure to cold, and wet weather.

Connected with this division of the subject is the effect of Lunar influence upon vegetable life. * In the periodical before quoted, it is asserted that the Wallaba, a resinous tree resembling mahogany, and common in the woods of Demerara, if cut down in the dark a few days before new moon, is exceedingly durable and so tough that it can only be split with great difficulty ; but if on the other hand, it be felled at full moon, it can be split with the greatest ease and its durability is lost. Advantage is taken of this circumstance in the purposes to which the wood is applied.

By the same correspondent it is also stated, that bamboos of the thickness of the arm are remarkable for their durability, and will last ten or eleven years if they be felled when the nights are dark, but the reverse holds good if they are cut down when the moon is at the full. I have also been informed by an intelligent and long resident at the Mauritius, that the old planters there are fully impressed with the reality of the influence of the moon upon vegetable life. He mentioned a curious circumstance, viz. that the old houses, built of precisely the same wood as the more recent ones, are far more durable, and this the planters ascribe to the fact of much greater attention being originally paid to the period of the moon at which the trees were cut down. This statement confirms, to a certain extent, the assertion of the correspondent in the Nautical Magazine.

These circumstances have been related, with the view of showing the direct and marked influence, which the moon exerts, or is supposed to exert, upon animal and vegetable life. It must be admitted, however,

* Nautical Magazine.

that the authenticated instances recorded are very few, and the subject chiefly rests upon general assertions. The opinion as to the danger of sleeping exposed to the rays of the moon in tropical climates, is, nevertheless so common, that it must be allowed some weight, though, it may be, the effects attributed to them are somewhat exaggerated

It is probably impossible to give any plausible explanation of the manner in which the rays of the moon act upon persons exposed to them. Indeed, from the unsatisfactory state in which the science of meteorology continues up to the present time, and especially that part of it which relates to the action of atmospheric changes upon the animal economy, this will not be a matter of surprise.

I will now proceed to consider the second division of the subject, which is more particularly the object of this paper.

2nd.

*Indirect Influence.*

By the term "Indirect Influence," I would be understood to mean that modification of the atmostphere, depending upon or occurring at the principal lunar changes, to which the origin of some diseases, and certain alterations in the symptoms of others, have been attributed.

Amongst the old writers, the number of diseases thought to be influenced by the phases of the moon is found to be very considerable. I have already alluded to the diseases mentioned by Hippocrates and Galen, and it will now be sufficient to enumerate some of those since observed. Valescus de Taranta, Fernelius, and in the year 1637, Diemerbroeck, ascribed plague to celestial changes, in which opinion they were joined by Ludovicus Mercator. Diemerbroeck who observed the course of the plague for a period of four years, says, "for two days before and after the new and full moon this horrible disease was always aggravated, and at those times it attacked most frequently, and almost all those then seized with it died, and that very quickly."

Bartolinus Tulpius, and Groenvelt noticed the connexion between a disordered state of the bladder and kidneys, and the phases of the moon, and Weffer de Schaffhausen maintained that the occurrence of cerebral diseases, was frequently observable at the periods of new and full moon. Towards the close of the 17th Century, the opinion became very general; thus Floyer in asthma, Morton in fevers, Piso in hysteria, Hoffman in epilepsy, and Musgrove in periodical Hæmorhages, recognised distinct lunar influence.

Professor Ramazzini, who wrote upon a fever which prevailed at "Modena" in the year 1695, states, that "at the full, and particularly the new moon, this fever was aggravated," and this, he says was noticed not only by himself, but also by other professors, and tended not a little towards the prognosis and cure of this disease.

These observations are given upon the authority of Dr. Coldstream's thesis. It must be remembered they were all made in Europe, and I am not aware that the assertions, with respect to the moon's influence upon many of the diseases, have been at all confirmed by modern European Physicians. Indeed, in few works of the present day upon the diseases of temperate climates do we find any allusion to the subject.

The investigations of tropical practitioners have been chiefly directed to the effect of lunar influence in fevers, and more particularly in the intermittent forms of these complaints, and it is principally to this class of diseases that we are to look for any direct proof of its action. Here, however, we shall be disappointed if we expect to find it supported by minute statistical evidence, but so far as the combined opinions and assertions of a number of observers may afford data, from which to draw conclusions, we shall not be deficient in this kind of proof.

1st. For many years the connexion, between the occurrence of paroxysms of fever, and the lunar changes, had been observed in tropical climates, but it was not until the year 1768 that the knowledge of the fact was brought to Europe; or rather, it would be more correct to say, it was not until this period that attempts were made to establish the point by direct proof. For this, we are indebted to Dr. Lind. Many examples of the marked influence of the moon upon fevers were brought forward by this author and great stress was laid upon the extraordinary effects of eclipses, as may be inferred from the following remark.

"We observed the violent and sudden effects of the moon upon the 20th November, at which time an eclipse of the sun occurred. Almost at the same moment, not fewer than eight of the sailors, who were convalescent from fever, were seized with a most violent paroxysm."

Dr. Lind, though at first a very staunch advocate for the doctrine of lunar influence, afterwards changed his opinion, and maintained that the increase of febrile complaints observed about the changes, was due to the high tides which occur at those times, overflowing the low grounds and generating a large quantity of malaria. This explanation has never been admitted, as it is considered, that the influence of the moon has been observed in localities remote from the sea. *

* Jackson on the Fevers of Jamaica.

2nd. Dr. Balfour subsequently paid much attention to the subject. He wrote to the greater number of Collectors and Medical men throughout India, and arranged their facts and opinions, from which and his own observation, he drew these conclusions.

1st. Paroxysms of fever often return or are exacerbated, about the full and new moon.

2nd. The three days which precede, and the three which follow new and full moon, are remarkable for the invasion and relapse of fevers, and the day of the new and the day of the full moon, are the most remarkable of all.

3rd. The days which follow the change, are generally more remarkable than those which precede.

4th. At the new and full moon, the most frequent accessions of fever are between the hours of eight in the morning and three in the afternoon, and also between eight o'clock in the evening and two in the morning.

The days, which are here considered as those in which the perfection of lunar influence is manifested, are not admitted by Dr. Jackson, whose remarks I shall now have to refer to.

3rd. * Dr. Jackson, who examined with much care the influence of the lunar changes upon the fevers occurring in the West Indies, has mentioned the following facts. "His attention (he says) was first drawn to the subject, by observing that 3 or 4 men of a company of soldiers, were frequently attacked with fever upon the same day, whilst there was no recurrence of fever in the Garrison for the ensuing fortnight. This was observed oftener than once, at the time the moon was near the full. Thirty cases of proper remitting fever, were noticed during a year; and it was found that 28 cases occurred upon one of the 7 days preceding new and full moon. In the following year, 28 cases were observed, 22 of which occurred in the periods above mentioned, whilst of the remaining six cases, three occurred on the day of the new moon a few hours after the change had taken place."

These observations apparently refer exclusively to primary attacks of remittent fever and it does not appear, that Dr. Jackson has remarked any febrile exacerbations as occurring at the lunar alternations. It would be of importance, if we could in the statements of other observers, distinguish those remarks which refer to the different forms of febrile complaints. Many of the observations are unfortunately of too general a nature to admit of this distinction.

* Oper. Cit.

4th. * Mr. Annesly states, that he has frequently observed the influence of the full and change of the moon upon fevers, and that he has found it necessary to regulate his practice accordingly, particularly during convalescence from febrile diseases. He does not offer any decided explanation of the occurrence of these modifications but he refers to the atmospherical vicissitudes prevailing at those times as well as to the high tides overflowing the low grounds ; but he admits these explanations are not sufficient.

5th. † Dr. Johnson has also noticed the same fact. "However sceptical (says he) people may be in England with regard to planetary influence in fevers, it is too plainly perceptible within the tropics to admit of a doubt." Dr. Jackson states, that in his own person, when laboring under obstructed liver, he has frequently observed two slight febrile paroxysms in the course of each diurnal revolution, particularly near the full and change.

6th. ‡ Dr. Goodeve, in describing a peculiar form of intermittent fever common in the neighbourhood of Midnapore, makes the following remark in connexion with the influence of the moon. "The accessions of this fever, were evidently influenced by the changes of the moon, and however sceptical many people may be on that point, I am persuaded by close observation of this much ridiculed subject, that the human body is nearly as much controlled by the lunar changes, as the tide and weather ; and in confirmation of this opinion, we find that the periods of new and full moon are those, at which the paroxysms of this malady recur, and that with the utmost regularity" The fever alluded to by Dr. Goodeve, was characterised by a much longer duration of the hot fit, sometimes so long as 48 hours, as well as by its greater severity. There was in addition a peculiar local affection consisting of an œdematous swelling with pain and a burning sensation of the feet and ankles.

7th. § In the Sumbulpore, or Arracan fever, the influence of the lunar changes is said to have been particularly remarked as well as in the cases of fever, which prevailed amongst the crews of the Flotilla, employed on the rivers of Mesopotamia.

* Diseases of India 1841, pp 524.

† Johnson and Martin on Tropical Diseases, pp. 102.

‡ Transactions of the Medical and Physical Society of Calcutta. Vol. vii. part 1st pp. 12.

§ Indian Journal of Medical and Physical Science, old series, vol. 1. p 143.

8th. * In the Report of the diseases of the Flotilla, drawn up by Mr. Floyd, it is mentioned that " in intermittent fever, quinine often failed, which was attributed to lunar influence, and to the southerly winds, which generally attend the changes of the moon." Mr. Floyd further states, that " fever from this cause was so regular, that it was not uncommon for the men to come for their quinine, a day or two before the expected attack." Again, in another report of a following year in describing an inflammatory form of fever which prevailed in the Flotilla, he says, " We must not disregard the highly electric state of the atmosphere, and the periodical changes of the moon, which would appear to have an indirect effect upon the sanguiferous system, thereby predisposing to fever, as it was mostly present when either one or other, of the above states prevailed." This was a fever without remissions.

I am not aware of the exact parallel of latitude in which these observations were made, as the vessels of the Flotilla were frequently changing their position ; I believe, however, in no case, was it under 34 degrees.

9th. In the replies to certain queries from the Medical Board, respecting the salubrity of some parts of the province of Scinde, the effect of lunar influence is occasionally particularly referred to.

1. † Mr. Jephson, in his Statistical Report of Sukkur states, that " during the hot season, he has observed (in cases of fever and other diseases) the body to be affected in a remarkable degree, during the different phases of the moon, and so often as he has taken notice, the paroxysms of fever near the springs were more violent at mid-day than at any other time."

2. ‡ Mr. Edwards, who also wrote upon the health of Sukkur, says, " at this station the lunar influences are very powerful, and I have generally observed, that to whatever ailments the sufferer may be subject, they are prominently brought out on these occasions."

3. § At Quetta likewise Mr. Leith thus observes " the effect of sol-lunar influence in fevers, is experienced to be as great here as in India."

These observations are incidentally made, in the remarks upon the diseases of these stations.

* Transactions of the Medical and Physical Society of Bombay ; no. iv. pp. 40.

† Oper. Cit. pp. 80.

‡ Oper. Cit. pp. 83.

§ Oper. Cit. pp. 111.

10th. * In the report of H. M. 46th Regiment by Asst. Surgeon Shean, there is a description of a number of cases of fever, which arose from exposure, and in which it is stated that in a few cases the fever returned, after being absent several days, and that this always occurred upon the first full moon after the convalescence.

11. † Dr. Bankier in his work upon cholera, mentions the case of an officer in the Bombay service, who had an attack of fever every month for several years. He states, "the paroxysms were always greatest when the moon came to the full, and gradually decreased towards the last quarter."

12 ‡ At the Mahabuleshwar Hills, which is probably one of the best stations for observing the influence of the moon upon convalescents, Mr. Murray observes, "the patient has usually a return of the fever at each of the two principal lunations, more rarely at one of them."

13. § Dr. Wise in alluding to the attacks of fever and inflammation, which accompany the early stages of elephantiasis, makes the following remark: — "The moon may be observed to have a remarkable influence in producing the paroxysm; in many cases it takes place at the change of the moon, in others at the full, and in some, (more especially at the commencement of the disease) at both change and full moon."

‖ The above facts and opinions constitute the greater number of those

* Madras Report of Diseases, between the years 1822 and 28.

† Essay on the origin, progress, and treatment of Cholera. Madras 1835; by Jas. Bankier, M. D. Royal Navy.

‡ Transactions of the Medical and Physical Society, Bombay. Vol. 1 pp. 129· et sequent.

§ Transactions of the Medical and Physical Society of Calcutta, no. viii. part 1st. pp. 161.

‖ *Note by the Secretary.* — Since Mr. Peet's paper was drawn up and presented to the Society, the British and Foreign Medical Review for October 1843, has been received. — In this number there is a very interesting report on the epidemic ague or "Fainting Fever of Persia, written by Dr. Charles W. Bell, Physician to Her Majesty's," Mission in Persia, from which the following note is extracted, bearing on the subject of Mr. Peet's communication.

"I am well aware of the ridicule to which I expose myself in thus attributing such marked effects on disease to the changes of the moon; but the evidence before me is so strong as to have removed all my doubt upon the subject; and I see the effects in such a number of patients who suffer from ague every full and change, that I should feel ashamed did the fear of ridicule prevent me stating a fact of which I am so entirely convinced, and which, if true, is so important. Unfortunately, no account is kept of the daily number

which have been recorded in support of the doctrine of the moon's influence in fevers. It has been necessary to give them at some length, in order to adopt as much as possible, the phraseology of the authors, as in any question, which rests so much upon general assertions as that of "lunar influence" the proofs in a great measure depend upon the manner in which the opinions are expressed. I have now to mention some facts which have not yet been brought forward.

14th. At the European General Hospital of this Presidency, the phases of the moon were marked as they occurred upon each case admitted during the year 1839. By the kind permission of Dr. Morehead, I have been allowed to examine these cases. With the exception of intermittent fever, no appearance of lunar influence could be traced in any of the cases, and even in this disease the effect was almost doubtful. Twenty-three cases, comprising the various forms of intermittent, viz. quotidian, tertian, &c. were examined; of this number, there where 14 cases, in which the symptoms did not appear to be at all modified at the springs. The days particularly observed, were the three preceding and following each of the lunar changes, as well as the actual day of the change.

The remaining nine cases appeared to be slightly affected, chiefly by exacerbations occurring in some one of the days above mentioned. In few of these, however, could the exacerbations be traced to a number of successive changes; and of course in giving an opinion when only one or two changes are observed, due allowance must be made, for what may be referred to mere coincidence.

The fever here alluded to consisted of a mild form of intermittent, common at the Presidency; the subjects of it were almost all sailors.

The conclusion drawn at the time, from the careful examination of these cases, was, "that in intermittent fever, a modification of the symptoms, chiefly by exacerbations, does occasionally take place about the periods of the principal lunar alternations, but in many cases it is very slight, and in some inappreciable." These cases, are, however, too few to afford any decided proof, either in favor of, or against, the doctrine of lunar

of deaths in Teheran; if there were, I should be content to rest the settlement of the question upon that alone. The 15th I am satisfied has been by far the most fatal day of the lunar months, corresponding to September, October, November and December 1842, and the 12th and 13th and the 26th and 27th the days upon which a recurrence of fever has most frequently taken place, or upon which the symptoms have most frequently become aggravated."

British and Foreign Medical Review, October 1843 — p. 563.

influence, and, moreover, they only refer to that slight form of fever common amongst sailors. There may possibly be other kinds of fever in which the effect may be more marked, as for example, the fevers prevalent in Guzerat, Scinde, and in other places where the exciting causes of the same form of fever, are equally abundant.

So far the evidence has been more or less favorable, to the idea of lunar agency in fever. It will be seen, however, that it in a great measure consists of opinions formed cursorily from observation, a kind of evidence peculiarly liable to fallacy. It is well known how often opinions are entertained upon some subject, the grounds of which being put to the test of careful examination, and the facts accurately arranged, lead to results, calling for an entirely different view of the matter. I might instance the common idea which at one time prevailed of the moon's influence in cholera. After the publication of Mr. Orton's ingenious though erroneous theory of the production of this disease, ascribing it to some change in the balance of the electricity of the atmosphere, occurring about the new and full moon, much stress was laid upon the alledged fact, and many opinions were given, from observation of the disease, which, if they had been correct, would have left no question, as to the decided part which the moon plays, as an exciting cause of this complaint. When, however, the report of cholera was drawn up by the Madras Medical Board, the point was elaborately investigated, and it appears that so far from there being a greater number of attacks, at the principal lunar changes, there was in fact a less number, leaving a small majority in favor of the quarters or non-morbific periods.

I have thought it necessary to make these remarks, before bringing forward some facts, which are opposed to the idea of lunar agency in certain fevers.

1. * The first attempt to decide the question by statistical proof, was made at the request of Dr. Balfour, by Dr. Stoker of Dublin. He kept records for this purpose, of the cases, admitted into a large fever hospital between July 6th and September 6th, 1817.—276 cases of fever were observed and arranged in a tabular form; upon examination, as Dr. Stoker states, but little coincidence indeed is to be remarked. These Tables were made from cases of a fever which was then epidemic, and which was the result of a prevailing famine, circumstances which Dr. Stoker thinks might have operated to prevent the influence of other

* Transactions of King's and Queen's College of Physicians; Dublin, Vol. II, pp. 453.

causes from being observable;—in addition, however, the Tables are not entitled to much consideration as affording an argument against the influence of the moon in tropical countries, as the observations were made in a temperate climate, where I believe the most determined advocates of the doctrine admit the effect to be much less marked.

2. * In a report drawn up by order of the Madras Government, respecting the fever which prevailed in the years 1809-10-11, there is this remark, "With regard to the moon producing relapses of fever we cannot speak with much confidence." Allusion is then made to the assertions of Drs. Balfour and Jackson, and much stress is laid upon the discrepances between these authors. Dr. Joseph Clarke is also quoted by the Committee as a disbeliever in the truth of the doctrine. But by far the strongest circumstance, mentioned in this publication, is a reference to a letter from Mr. Currie, afterwards surgeon to the Residency at Hyderabad, who appears to have stated that he clearly ascertained from a record of attacks and relapses kept in the hospital of the 1st Regiment of Cavalry for two years, that so far from a greater number of attacks or relapses happening at or near the full moon they were actually least common at those times.

If there should be no error in the records from which this statement is taken, it must be acknowledged as being strong negative proof indeed upon the subject of lunar influence.

3. † Mr. Geddes, in his report of the Seringapatam fever, has expressed an opinion that the influence of the moon in fevers is not so decided as is generally believed. By referring to a table, which accompanies this report, it appears from observations made during a period of eleven months, that the greatest number of seizures was on the 15th day of the moon's age; the least number on the 25th day in the proportion of 68 to 31 cases. The 14th only differed by 3 cases, there having been 65 seizures on that day. The next day most obnoxious is the 11th, upon which there were 59 seizures.

Although the greatest number of seizures happened upon the day following the full moon, and exceeds the least number in the proportion of nearly double, yet as Mr. Geddes says, the ratio of "the intermediate days is but small." Mr. Geddes thinks it is no slight argument against the

* Medical, Geographical and Agricultural Report of a Committee appointed by the Madras Government to inquire into the causes of the epidemic fever which prevailed in the years 1809-10-11; drawn up by Dr. Ainslie, Mr. A. Smith, and Dr. M. Christy. London 1816.

† Report of the Seringapatam fever published at Madras in 1827.

idea of lunar influence that such a circumstance has never even suggested itself to the imagination of the natives, and he believes his Table loses its weight from the fact, of sepoys frequently concealing slight attacks of fever in order to prevent being separated from their families by being taken into hospital.

4. For the *following very valuable Table, with remarks, I am indebted to my friend Dr. W. P. Cruickshank, who served with the late expedition in China. In this Table the morbific periods or those at which lunar influence is particularly manifested, are presumed to be the three days preceding, the three following, and the day of each principal lunar change. The number of attacks is, however, given upon all the other days of the moon's age. Of 11 cases of remittent fever, three only happened within the days above mentioned as the morbific periods, the remaining 8 having occurred at other times; this shews a proportion of 8 cases against the supposition of the moon's influence in this form of fever.

Of 76 cases of first attacks of quotidian there is only a maximum of 6 cases at the principal lunar changes, and in the next column, of 36 cases of tertian, the number of attacks is the same in the morbific and non-morbific periods. The total number of first attacks of fever observed, is 123; 62 of which happened near the changes, and 61 at other times, shewing only 1 case, in favor of the full and new moon.

Again, out of 153 relapses noticed, there is only a difference of 5 cases between the attacks which happened in what have been called the morbific periods, and those which occurred at other periods of the moon.

It appears, therefore, as Dr. Cruickshank observes, that "neither in the first attacks, nor relapses, does the moon seem to have exerted any perceptible influence."

There is one circumstance which I ought perhaps to mention here.—In conversation with Dr. Cruickshank, before these Tables were made out, as to his opinion of the effect of the lunar changes upon the fever which prevailed in China, he said, that he had the strongest belief in their marked influence; in fact, that the impression on his mind was so strong, that scarcely any thing could make him doubt it. At my request he kindly put his opinion to the test, by preparing the above Table, from records which he had kept with the view of investigating this subject.

The entirely different view of the subject, which the arrangement of

* *Note by the Secretary.* As being more convenient to the Printer, this table has been placed at the end of the Paper.

facts gave rise to in this instance, from the one which had been drawn from observation, appears to me, to afford a tolerably good illustration of a remark which has been hazarded in a preceding part of this paper, viz. as to the difficulty of forming an accurate opinion on some points, from cursory observation. It is with this view that I have alluded to it, as well as to shew that the Table may be looked upon as perfectly impartial.

It has been already stated, that there is a difference between Drs. Jackson and Balfour as to the period of the moon, at which the modification of the symptoms is most frequently remarked; the former having ascribed the perfection of lunar influence to the 7 days preceding new and full moon, whilst the latter considered the days, which are given in Dr. Cruickshank's Table, as the morbific periods.

With the view of ascertaining whether there is any greater coincidence between the days mentioned by Dr. Jackson and the occurrence of fever, than in the periods of Dr. Balfour, I have prepared from the foregoing Table a list of those cases which occurred upon the 7 days, which preceded new and full moon, contrasting them with those, which happened at the other periods.

| Nature of Fever. | | Number of cases, occurring in the 7 days, before new moon. | Number of cases, occurring in the 7 days, before full moon. | Number of cases, occurring at other periods. | Total number observed. | Difference in favor of 7 days, before new and full moon. | Difference in favor of other periods. |
|---|---|---|---|---|---|---|---|
| First attacks, | Remittent | 4 | 6 | 1 | 11 | 10 | " |
| | Quotidian | 26 | 15 | 35 | 76 | 6 | " |
| | Tertian | 14 | 10 | 12 | 36 | 12 | " |
| | Total | 44 | 31 | 48 | 123 | 28 | " |
| Second attacks, | Quotidian | 3 | 10 | 23 | 36 | " | 10 |
| | Tertian | 7 | 7 | 20 | 34 | " | 6 |
| Third attacks, | Quotidian | 2 | 3 | 7 | 12 | " | 2 |
| | Tertian | 4 | 3 | 14 | 21 | " | 7 |
| Fourth attacks, | Quotidian | 2 | 2 | 4 | 8 | " | " |
| | Tertian | 6 | 1 | 7 | 14 | " | " |
| Fifth attacks, | Quotidian | 3 | 1 | 1 | 5 | 3 | " |
| | Tertian | 2 | 4 | 3 | 9 | 3 | " |
| Sixth attacks, | Quotidian | " | 1 | 1 | 2 | " | " |
| | Tertian | 3 | 2 | " | 5 | 5 | " |
| Seventh attacks, | Quotidian | " | 1 | 1 | 2 | " | " |
| | Tertian | " | 1 | 2 | 3 | " | 1 |
| Eighth attacks, | Quotidian | " | " | " | " | " | " |
| | Tertian | " | " | 1 | 1 | " | 1 |
| Total number of Relapses | | 32 | 36 | 84 | 152 | 11 | 27 |

From this Table it appears, that, of 123 cases of 1st attacks, 75 happened in the periods referred to by Dr. Jackson, and 48 in the other quarters, leaving a majority of 27 cases in favor of his view.

Of 152 relapses, there are 68 cases occurring in Dr. Jackson's mor-

bific period, and 84 in the quarters, shewing a majority of 16 cases, in favor of the latter periods, or against Dr. Jackson's view.

The proportion of cases of first attacks happening at those times, at which Dr. Jackson considered the influence of the moon to be particularly manifested, shews a much larger number than in the morbific periods of Dr. Balfour, but unfortunately for carrying out the proof, the same remark cannot be applied to the relapses. Taking the whole of the first attacks and relapses together, amounting to 275, there is only a majority of 11 cases in favor of the 7 days preceding new and full moon, or the morbific periods of Dr. Jackson, a proportion by far too small, to admit of any argument being founded upon it.

I have now endeavoured to arrange the various facts and opinions bearing upon the subject of lunar influence in connexion with fever.

When we consider the very general idea which prevails upon this subject, it will appear almost surprising that so few facts are recorded in its favor ; as it might be thought there would be no great difficulty (by keeping records of the number of attacks of fever in a corps ) in collecting such information as would be sufficient to prove at once, whether there is really that coincidence between the occurrence of this disease and the changes of the moon, which the advocates of the doctrine would lead us to believe. The Hospital records of a Regiment would undoubtedly supply sufficient information with regard to the primary attacks ; but it will probably be admitted that a marked line of distinction should be drawn between cases of first, and those slight attacks, to which persons who have long suffered from febrile derangements, are subject. It is not uncommon to observe that persons after recovery from an attack of fever, are often affected with slight recurrence in the form of a few paroxysms, or indeed of a single febrile accession happening at considerable intervals: these paroxysms are frequently considered by the individuals themselves, to occur with great regularity at the springs.—Although we may not be disposed to admit that primary attacks, or even actual relapses of fever, are materially influenced by the lunar changes, it may yet be quite possible, that there is truth in the opinion that these slight cases of simply febrile exacerbations happen most frequently at those times.

In Dr. Cruickshank's Table, I am inclined to believe, that what are there called relapses, refer to distinct secondary attacks of fever, and not to those slighter instances which I have endeavoured to distinguish from actual attacks.

The records of an Hospital are not calculated to furnish much information in relation to this slight form of fever, or rather sequela of fever, as in the intervals between the paroxysms the health may be tolerably good; at all events, not sufficiently impaired to induce the patients to present themselves at a public establishment; and in the case of sepoys, the remark of Mr. Geddes (formerly alluded to) may be correct, viz. their disinclination unless seriously ill, to apply for relief, on account of being obliged to leave their homes and families.

The same remark is also applicable to sailors, as there is frequently a wish on their part to avoid the sick list, from their supply of spirits, in the event of their reporting themselves sick, being always stopped; and it may, therefore, be not improbable that even amongst the cases of the ship, in which Dr. Cruickshank served, slight febrile paroxysms might have occurred at the lunar changes without being brought to his notice.

It is, I think, these single paroxysms or slight attacks of fever, ( to which I have alluded ) that have given rise so generally, amongst unprofessional persons, to the belief of the great influence of the changes of the moon. The opinions of medical men, however, with respect to the increased severity of epidemics observable at certain periods of the moon, cannot be subjected to this kind of explanation; but I may remark as a singular circumstance, that in the few instances, where the subject of lunar influence has been put to the test of actual proof, by the collection of a number of cases both of primary attacks and relapses, in the face of the positive assertions in its favor, the result has been either altogether opposed to the view generally taken, or the relation between the attacks and changes has been so slight, that an impartial person would be almost compelled to doubt its existence.

Not less extraordinary is the discrepancy between two authors, who evidently studied the point with much care, as to the period of the moon's age, when the influence is manifested; I refer to the assertions of Drs. Jackson and Balfour, before mentioned. In whatever way we may be disposed to account for this difference, it must necessarily throw a doubt upon the conclusions drawn from the cases submitted to the observation of these writers, and operate to a certain extent as an argument, against the theory of lunar influence.

With regard to the effect of lunar agency upon other diseases, unconnected with fever, I have already adverted to the opinion which at one time prevailed as to the influence of the moon in the production of cholera. So many supposed facts in illustration of its marked effect upon

this disease were published, that when the report of cholera was drawn up by the Madras Medical Board, the point was considered of sufficient importance to entitle it to a careful investigation. Accordingly cases were selected from different official records ; * from which it appears that out of 7,664 cases observed, 3,725 were admitted during the quarters of the new and full moon, considered the morbific periods, and 3,939, during the first and last quarters, or non-morbific periods, which leaves a difference of 214 cases in favor of the latter periods. The inference deduced was, that the individual cases of cholera, were not affected by the influence of the moon ; the increased number occurring in the last quarter, was referred to the unsettled weather, which prevails at that time, operating as an occasional or remote cause. An attempt was also made at the same time to ascertain, whether the epidemic invasions of cholera could be traced to the principal lunar changes. In the quarters of the new and full moon there were 57 beginnings of epidemics ; in the first and last quarters 67 beginnings, shewing a difference of 10 in favor of the latter or non-morbific periods.

2. In some cases of periodical hæmorrhage, it has been believed that an increased discharge often happens at the lunar changes.

† Mr. O'Shaughnessy has given an account of a case of fibro-cartilaginous tumor, in which he says, "The bleeding which occurred from the swelling was more particularly marked, about the period of the full moon, and it was more abundant and more certain to return at that time." Dr. Coldstream has likewise mentioned that he believes he has not unfrequently traced an aggravation of hæmorrhoidal discharges, as well as of cases of neuralgia, to the periods of the principal lunar changes.

3. ‡ Mr. Haines in his report of the 2nd Battalion of Madras Artillery states, that exposure to night air sometimes causes spasmodic affections of the chest and abdomen which appear to him to be more frequent at the lunar changes, and particularly where there has been electric fluid observed from the presence of lightning.

* Report of the Epidemic Cholera drawn up by the Madras Medical Board, page xciii.

† India Journal of Medical and Physical Science. Vol. iii. p. 66.

‡ Madras Reports.

## *Doctor Cruickshank's Table.*

| | Full Moon. | | | | | | | New Moon. | | | | | | | Total in full and new moon. | First Quarter. | | | | | | | Last Quarter. | | | | | | | Total in first and last quarters. | Difference in favor of full and new. | Difference in favor of first and last quarters. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 3 days before. | 2 days. | 1 day. | Full. | 1 day after. | 2 days. | 3 and 4 days. | 3 days before | 2 days. | 1 day. | New. | 1 day after. | 2 days. | 3 days. | | 3 days before. | 2 days. | 1 day. | 1st quarter. | 1 day after. | 2 days. | 3 days. | 3 days before. | 2 days. | 1 day. | Last quarter. | 1 day after. | 2 days | 3 days. | | | |
| First attack, Remittent | " | 1 | " | " | " | " | .. | 1 | 1 | " | " | " | " | " | 3 | " | " | " | 1 | 1 | " | 3 | 1 | " | " | 1 | 1 | " | " | 8 | " | 5 |
| Quotidian | 2 | 1 | 2 | 4 | 3 | 1 | 8 | 3 | 2 | 4 | 6 | 2 | 1 | 2 | 41 | " | 3 | 2 | 2 | 1 | 4 | 3 | 1 | 2 | " | 5 | 6 | 2 | 4 | 35 | 6 | " |
| Tertian | 1 | 1 | 1 | " | 1 | 2 | " | 1 | 4 | 5 | 2 | " | " | " | 18 | 3 | 1 | " | " | 2 | " | 5 | 2 | " | 1 | 2 | " | 1 | 1 | 18 | " | " |
| Total of first attacks | 3 | 3 | 3 | 4 | 4 | 3 | 8 | 5 | 7 | 9 | 8 | 2 | 1 | 2 | 62 | 3 | 4 | 2 | 3 | 4 | 4 | 11 | 4 | 2 | 1 | 8 | 7 | 3 | 5 | 61 | 1 | " |
| Second attack, Quotidian | 2 | " | 1 | 3 | " | " | 3 | 4 | " | 3 | " | 1 | 1 | " | 18 | 1 | 1 | 3 | 1 | 3 | 1 | 2 | " | " | " | " | " | 3 | 3 | 18 | " | " |
| Tertian | " | 1 | 1 | " | 1 | 1 | 1 | 1 | " | 2 | 2 | 5 | 3 | 1 | 19 | " | 2 | " | " | 1 | 1 | 3 | 2 | 1 | 1 | 3 | 1 | " | " | 15 | 4 | " |
| Third attack, Quotidian | 1 | " | " | 2 | " | " | " | " | 1 | 1 | 1 | 2 | " | " | 8 | 1 | " | 1 | 1 | 1 | " | " | " | " | " | " | " | " | " | 4 | 4 | " |
| Tertian | " | " | " | " | 1 | 1 | 2 | " | " | 1 | 2 | 2 | " | " | 9 | 2 | 1 | 1 | " | 2 | 1 | " | 2 | " | " | 2 | 1 | " | " | 12 | " | 3 |
| Fourth attack, Quotidian | " | 1 | " | 1 | 1 | " | " | " | " | " | " | " | " | " | 3 | " | 1 | " | " | 1 | " | " | " | " | 1 | 1 | " | 1 | " | 5 | " | 2 |
| Tertian | " | " | 1 | 1 | 1 | " | 1 | " | " | 1 | 1 | " | 1 | 1 | 8 | " | " | 1 | " | " | " | " | " | " | " | 2 | 2 | 1 | " | 6 | 2 | " |
| Remittent | " | " | " | " | " | " | " | " | " | " | " | " | " | " | " | " | " | " | " | " | " | " | 1 | " | " | " | " | " | " | 1 | " | 1 |
| Fifth attack, Quotidian | " | 1 | " | " | " | " | " | 2 | " | " | " | " | " | " | 3 | " | 1 | " | " | " | " | " | " | " | " | " | " | 1 | " | 2 | 1 | " |
| Tertian | " | " | 1 | " | " | " | " | " | " | " | 2 | 1 | " | " | 4 | .. | " | " | 1 | " | 1 | 1 | " | " | " | " | 1 | 1 | " | 5 | " | 1 |
| Sixth attack, Quotidian | " | " | " | " | " | " | " | " | " | " | 1 | " | " | " | 1 | " | " | " | " | " | 1 | " | " | " | " | " | " | " | " | " | 1 | " | " |
| Tertian | " | " | " | " | " | " | " | 1 | " | " | " | " | " | " | 1 | " | " | " | 1 | " | 1 | " | " | " | " | " | 2 | " | " | " | 4 | " | 3 |
| Seventh attack, Quotidian | 1 | " | " | " | " | " | " | " | " | " | " | 1 | " | " | 2 | " | " | " | " | " | " | " | " | " | " | " | " | " | " | " | " | 2 | " |
| Tertian | " | " | " | 2 | " | " | " | " | " | " | " | " | " | " | 2 | " | " | " | " | 1 | " | " | " | " | " | " | " | " | " | " | 1 | 1 | " |
| Eighth attack, Quotidian | " | " | " | " | " | " | " | " | " | " | " | " | " | " | " | " | " | " | " | " | " | " | " | " | " | " | " | " | " | " | " | " | " | " |
| Tertian | " | " | " | " | " | " | " | " | " | " | " | " | " | 1 | 1 | . | " | " | " | " | " | " | " | " | " | " | " | " | " | " | " | 1 | " |
| Total of Relapses | 4 | 3 | 4 | 9 | 4 | 2 | 7 | 8 | 3 | 8 | 9 | 12 | 5 | 3 | 79 | 4 | 6 | 6 | 3 | 10 | 5 | 7 | 5 | 1 | 2 | 10 | 5 | 7 | 3 | 74 | 5 | " |
| Grand Total | 7 | 6 | 7 | 13 | 8 | 5 | 15 | 13 | 8 | 17 | 17 | 14 | 6 | 5 | 141 | 7 | 10 | 8 | 6 | 14 | 9 | 18 | 9 | 3 | 3 | 18 | 12 | 10 | | 135 | 6 | " |

The accompanying Table represents the periods of attack in Remittent and Quotidian and Tertian intermittent fevers observed on board the Honorable Company's Steam Frigate Sesostris, from the beginning of August 1842, when fever first made its appearance in the English fleet in China till the end of February 1843. 276 cases chiefly of Europeans were observed, in all 123 first attacks and 153 relapses, but in neither does it appear that the change of the moon exerted any perceptible influence. 65 cases of 1st attack and 5 relapses occurred in August when the ship was lying in the Yang tse Kiang river off Nankin about 300 miles inland, along a flat and swampy shore, the weather sultry and a daily average range of Thermometer from 78 to 84. On the 3rd of September she put to sea and with the exception of touching at a few ports, remained out all the month during which 54 cases of 1st attack and 45 relapses occurred. On the 11th October she arrived in Bombay harbour and during the remainder of that month, and of the period of observation, remained for the most part there. From the excessive heat during the first two months most of the crew slept on deck under awnings.

# APPENDIX.

# APPENDIX.

## 1.

*Description of the operation of Lithotomy as performed by a Native Hakeem. Extracted from the Annual Report of the Sick of the 22d Regiment, N. I. for the year* 1842. By A. Arnott, M. D.

Presented by the Medical Board, May 1843.

Having had no occasion to perform any capital surgical operation myself, it may not, pro hac vice, be entirely out of place here, though not pertaining to my official charge, to describe an operation for Lithotomy performed in my presence by a Native Hakeem on a boy about 11 years of age, who had for some time suffered under the severest symptoms of stone in the bladder. No preparatory course of medicine that I am aware of having been gone through, the first object was to ascertain the existence of the stone and to bring it down into the neck of the bladder. The Hakeem's Assistant took the boy in his arms and jolted him up and down, allowing him to light on his feet with some violence. He then placed him on the lap of a friend seated on the end of a cot with his arms put under the lower end of the thighs; and his hands held to secure him in this position, which sufficiently exposed the perineum, the limbs being kept separate as much as possible. The Assistant compressed the abdomen from above downwards; and the operator, having introduced the fore and middle fingers of his left hand, previously well oiled, into the rectum, seized the stone and made it protrude as much as possible in the left side of the perineum, where, with a knife, the blade of which was a little broader than that of a common penknife, he made an incision proportioned to the size of the prominence formed by the stone, from a little behind the scrotum downwards between the anus and tuberosity of the ischium. He then made several deep incisions, some of which I believe were transverse, to make a sufficient opening for the exit of the stone; and to extract it he used an iron hook, an instrument that gave him more power and took up less room than a pair of forceps. Notwithstanding the enlargement of the inner wound two or three times, considerable force and violence were required, and these he did not hesitate to employ, his principal consideration appearing to be the extraction at all hazards.

The calculus was of the mulberry species, hard and compact, of a spherical form, with an uneven surface presenting prominent pointed tubercles, and weighed upwards of ʒvi. There was not much blood lost, and after the operation the thighs of the patient were brought together, and he was allowed to rest for some time. I understand that subsequently he was daily put into a warm bath, and when I again saw him the wound was closed and

the urine passed by the urethra. The fee of the Hakeem, who is a Mussulman and has operated by his own account in hundreds of cases, and who also professes to cure hæmorrhoids, was 10 rupees and rations for ten days for himself and his assistant.

There is nothing new or strange in this operation, for it was practised upwards of 2000 years ago. It was the similarity in the most minute particulars of the operation described by Celsus that struck my attention and makes it worthy of notice. The position of the patient was the same "reductisque ejus cruribus, ipsum, quoque jubet, manibus ad suos poplites datis, eos quam maxime possit, attrahere." The instruments were exactly the "scalpellum" and "uncus," and the after treatment corresponded even to the warm bath "Deinde interpositis duabus horis, in solium is aquæ calidæ resupinus demittendus est," &c. In short every step in the operation performed by this Hakeem, was described by Celsus.

Surgery was in a much more advanced state in Egypt and most likely also in India in very early times than it is at the present day; and from the stationary state of the arts and sciences in India, it is more likely that this operation has been known and practised from a very remote antiquity, than that it was introduced by British Surgeons who do not practise "cutting on the gripe," the knowledge of it having been derived from the Egyptians who imparted it also to the Greeks and Romans. Approved of and followed so many ages, it must have some undeniable advantages, and indeed it was preferred by the late Mr. Allan of Edinburgh, for boys under 14, which is the very age beyond which Celsus did not think it applicable, "in eo corpore, quod jam novem annos, nondum quatuor decim excessit." It is certainly the only one that Hakeems can perform, little or no knowledge of anatomy being required.

Calculus is by no means so rare in India, as, on the authority of Dr. Scott, it is stated to be by European writers. A man was brought in to me from a village in the neighbourhood with a stone impacted in the urethra, about an inch from the orifice, which I succeeded in breaking and extracting, and I have often removed stones from the urethra of children. This Hakeem states that in many districts of Candeish there is not a village he goes into where he does not find a case for operation. It is rare in Sepoys because their period of life is not that which predisposes them to it. A diet containing very little azote may not be favourable to the production of the lithic acid diathesis; and still a tendency to form phosphate and oxalate of lime deposits may be owing to the use of vegetable and farinaceous food.

Malligaum;
1*st January*, 1843.

## 2

*Extract from the Annual Report of the* 1*st Troop H. A. Horse Artillery for* 1842. By R. Baxter, Esq, relating to the march of the Troop from Candahar to Cabool, and thence to the Punjab.

Presented by the Medical Board, May 1843.

*General Observations.* The Troop has been on field service in Scinde,

and Affghanistan during the whole year, and has, since the beginning of March, been constantly marching, the men exposed to great variations of temperature, frequently bad water, and considerable fatigue and privation; the admissions consequently have been more numerous in the present, than during the past year, viz. 175 for 1841, and 233 for 1842. The deaths in hospital the same as last year, viz. 7 during the early part of the year. Whilst the Troop was stationed at Dadur, several cases of the Scinde ulcer occurred, and with the exception of the case of Gunner Miller who was obliged to be left behind at Quetta, as unfit to proceed on service, the cases, though some of them severe, were not protracted. The other diseases generally occurring in Scinde during this period were of a slight character; the admissions were most numerous during the months of May, June, and July, when the Troop was at and in the neighbourhood of Candahar, when the heat was excessive from 110°, to 115°, in the tents during the day. The prevailing diseases during the time were Intermittent Fever, Dysentery, and Diarrhœa, but they were of a mild type and soon yielded to the medicines employed. At this time a severe Erysipelas raged in the Force, causing the deaths of many men both Natives and Europeans; four very severe cases occurred in the Troop, of the head, and face, and one of the leg, and reduced the men to an almost hopeless state, but I am happy to say they all eventually recovered. After the march of the Troop towards Cabul, the weather soon became much cooler and Fever almost entirely disappeared from the Troop; the Dysentery and Diarrhœa, however, still continued and have been the prevailing diseases during the remainder of the year. After entering the Punjab the Corps generally became very sickly; the Troop was not affected in the way of a great increase of the admissions, but those already suffering from Dysentery became much worse; this may perhaps be explained, by the constant marching; for instance, 22 days with but one halt, the weather at the same time being in the morning very cold and damp, and towards the end of the month there was heavy rain. It will be seen by the foregoing remarks that the prevailing diseases during the past year were Fever, Dysentery and Diarrhœa, these diseases making more than half the number of admissions, viz. Dysentery and Diarrhœa 74; Fever 47. The Fever cases with one or two exceptions all occurring at, or in the neighbourhood of Candahar.

## 3.

*A case of Intermittent Fever complicated with Aphonia, also Observations on the case taken from the half-yearly reports of 2nd Troop Horse Artillery, dated 1st July* 1836 *and 1st January* 1837. By A. Arnott M. D. Surgeon.

Presented September, 1843.

I forward herewith a case of this fever selected on account of a remarkable symptom attending its course, which rendered it more than usually interesting. I think it may fairly be considered a case of complicated or masked Intermittent, with predominant affection of the head or the nerves of the larynx and other vocal organs. In the first instance the aphonia preceded the regu-

lar paroxysm only one hour; there was some impediment in the speech, two or three days previous to the next attack in which this symptom shewed itself; and in the third the aphonia itself no doubt constituted the paroxysm in a masked form, for there was neither heat of skin nor preceding rigor, and it came on one day after the full moon at the hour the paroxysms used to begin. The pulse, which in the course of the afternoon was 110, fell next morning to 80, proving that an intermission had taken place, and 5 or 6 days afterwards there was a regular paroxysm after which his speech gradually improved. I had some idea at first that the quinine, the patient had taken in previous attacks, might have had something to do in exciting congestion or inflammatory action in the brain, because he had complained of giddiness which he attributed to its use; however, that which was given on its being found that the paroxysms did not yield to arsenic, had a beneficial effect. In the attack in April, I left it off on account of the continued dilatation of the pupils, and the paroxysms ceased without it. He had an attack in June in which there was no impediment in the speech but the pupils were dilated. In October, having unduly exposed himself to the sun and also probably taken too much liquor, he was again attacked with aphonia. His pulse as formerly was very quick while the inability to speak continued; and next day, when his speech returned, it was reduced to the natural standard.

John Garvey, Gunner 2nd Troop H. B. admitted at Ahmedabad 20th January, (2 days after new moon) 1836, age about 22 years.

Was suddenly seized yesterday with speechlessness without any other symptom of paralysis or apoplexy. There was no loss of consciousness, feeling or voluntary motion, and no distortion of the face. His pulse and the pupils of his eyes were natural, but the conjunctiva was rather vascular; his breathing was hurried which seemed to be occasioned more by his efforts to speak than any thing else, and it soon became regular and calm. He pointed to his mouth and stomach, which led to a supposition that he had swallowed some poisonous substance, and the stomach was consequently evacuated by inserting the tube of the stomach pump down the œsophagus, whereby vomiting was induced, nothing however was thrown up, but the food he had eaten a short time before.

He was bled to 39 ounces which induced syncope, and he fainted again when sitting on the close stool.

The following enema was administered ℞ decoct. oryzæ ℥xii. olei terebinth. ℥i. magnes. sulph. ℥ii. m. solve, and he got 10 grs. of calomel and 10 of extract colocynth c. by which he was purged two or three times very freely. His head was shaved and a cold lotion applied to it. After these means were resorted to, he spoke a word or two once or twice, and then the cold stage of the fever, he has lately been subject to, came on, and during the night he was restless and feverish, with much thirst.

In November last at Poona, he suffered severely under remittent fever which assumed an irregular double tertian type, the exacerbations being daily, and commencing generally some time after noon. On account of inflammatory congestion in the head and chest venesection was freely and repeatedly used, assisted by purgatives and mercury carried to the extent of affecting the constitution, and followed up on the subsidence of the febrile action by quinine,

The venesection was performed in the first instance during the cold stage which it cut short, and most of the succeeding exacerbations had no cold stage. The cold affusion was also tried in his case during the hot fit. Neither of these modes of treatment were attended with any peculiar advantage. Has been in hospital three times on the march for fever, which was of a distinct intermittent form and treated chiefly by quinine and purgatives.

This morning he does not attempt to speak, pupils much dilated; pulse 92; he has also some cough; tongue dry; has the free use of all his limbs; very little vascularity of conjunctiva.

Repet. Venesectio et sumat calomel gr. v. c. pulv. jalap ʒss. Contin. lotio frigid. capit.

*January.* 21st. — He was bled to 24 ounces and during the bleeding he said, with an effort in reply to a question put to him, "better" and "a little," and he spoke the same words this morning. He had a paroxysm of fever again yesterday, which went through all the stages regularly. Pulse, this morning, 110; tongue pretty clean; pupils dilated; the medicine not having operated at mid-day he got an ounce of salts and afterwards he had several stools, no headach ℞. magnes. sulph. ʒi. aq. lbi. spirit æther nitros ʒss. m. sumat ʒii. secund. quaque hora. Contin. lotio frigid. capit.

22nd—Several stools from the medicine; had fever again yesterday, it came on at 2 o'clock; the pupils continued much dilated all day, but they are nearly of the natural size this morning, and he speaks pretty well; pulse 82.

Contin. medic. ut heri. Liq. arsenic. m. v. singul. dos. addit. et Lotio frigid. capit.

23rd — No fever yesterday, slept very well last night, and he thinks he is much better on that account; speaks now very distinctly; pupils rather dilated still, and countenance somewhat sallow; tongue clean; pulse 88. Contin. medic. ut heri.

24th — No fever yesterday; speech improving; pupils still rather dilated; feels very weak; pulse 76; tongue clean; 2 or 3 stools yesterday; lips a little sore inside, he thinks from the medicine. Contin. medicam.

25th—Had a paroxysm of fever yesterday which lasted from 2 till 9 o'clock; tongue clean; bowels open from medicine two or three times; pupils look more natural. Contin. medic. sec. q q. hora.

26th — Fever again yesterday; pretty well to day; pulse 88; tongue clean; some griping yesterday, he thinks from medicine; bowels open; pupils pretty natural now, and speech distinct. Contin. med. et apud hor 1 habeat quin. sulph. gr. iss.

Oonjah, 27th — Fever again yesterday, bowels open; tongue clean; pulse 100; slept badly. Omitt. medic, antea prescript. Habeat quin. sulph. gr. iss sec. q q. hora. febre non accedent.

Sidhpoor, 28th — Had fever almost all day yesterday, is pretty well this morning and has a better appetite; pulse 68; tongue clean. He got 8 grs. of extract. colocynth. c. and of calomel last night which operated two or three times; had only one dose of quinine yesterday. Contin. quin. sulph. sec. q q. hora.

Meytah, 29th — Got the quinine regularly every two hours and no fever came on; feels pretty well this morning; pupils and speech now natural; looks rather sallow; tongue clean. Contin. quin. sulph. ut heri.

30th — Fever yesterday ; pretty well this morning ; tongue clean ; pulse 76. Contin. quin. sulph.

Deesa, 31st — No fever yesterday, pulse 78 ; tongue clean. Contin. quin. sulph.

Deesa, *February* 1st — No fever yesterday, pulse 68 ; tongue clean. Contin. quin. sulph.

2nd — No return of fever ; appetite good ; pulse 66 ; tongue clean. Contin. quin. sulph.

10th — Has taken the quinine in daily decreasing quantities since last report and has had no return of fever. Discharged.

15th — Two days before new moon. *Vespere.* This morning about 9 o'clock he was seized with a cold fit which lasted till 12, when the hot fit came on and continued till 3, he has been sweating since, complains of no particular pain ; tongue clean ; bowels open. Sumat extract. colocynth. c. gr. viii. calomel. gr. iv. in form. pilul.

16 — Bowels moved three times ; he feels pretty well this morning ; tongue clean ; pulse 60. ℞ quin. sulph. gr. iss. acid. sulph. dil. m. ii. aq. menth. m. ft haust. secunda quaque hora summend.

21st — Has continued to take the quinine since last report and has had no return of fever. Discharged.

*March* 14th — Three days before new moon. *Vespere.* This morning he complained that he had had some impediment in his speech for two or three days. His bowels had been costive and his pulse was 90 ;—he was directed to take 5 grs. of calomel then and 4 ozs. of infus. sennæ with salts at 12 o'clock : a paroxysm of fever came on about 11 and continued till 4, the medicine has operated 5 times and he has no headache or pain any where except in his loins.

15th — Feels better this morning ; pulse 76 ; tongue clean ; bowels not open in night. Repetr. Haust. purgant. et habeat quin. sulph. gr. iss. omni hora febre absente.

16th — The medicine operated very frequently ; the paroxysm came on about 1 o'clock yesterday and was not so severe as the day before ; pulse 80. Contin. pilul. quin. sulph.

17th — Felt hot but had no regular paroxysm yesterday. Contin. quin. sulph.

18th — No fever yesterday ; bowels regular ; tongue clean ; speech perfectly distinct and without any impediment. Contin. quin. sulph.

21st — No return of fever and speech is quite distinct. Discharged.

*April* 4th, Two days after full moon. Was seized again yesterday with aphonia about 3 p. m. and at 6 his pulse was about 110 and his pupils dilated, but there was no heat of skin or preceding rigor. He was bled from the arm to about 24 ounces, and he got 10 grs. of c. ext. of colocynth and 6 of calomel which have operated four times ; pulse 80. ℞ quin. sulph. gr. iss. aq. ℥i. acid sulph. dil. m. ii m fit. haust. secund. q q. hora. capiend.

5th — Does not speak, but does not appear to make sufficient effort to do so, and while his arm was bleeding he did say some words ; pupils more natural in size this morning ; no paroxysm of fever yesterday ; pulse 84 ; tongue clean ; 28 leeches were applied to each temple last night as his pupils were then much dilated. Contin. quin. sulph. Sumat haust. purgant. ℥iv. c. vin. ant. ℥i.

6th — Yesterday evening, his pupils being considerably dilated and pulse quick, 20 more leeches were applied to each temple and followed by a blister to back of head and neck which has risen, and he says some words to day; pulse 100; pupils still dilated; bowels freely acted on yesterday by the medicine. Repet. haust. purgant. ʒiv. Omitt. quin. sulph.

7th — Utters a few words this morning; pulse 88; medicine operated five times. Sumat olei. ricini ʒi.

8th — Last quarter of moon. Does not speak so well this morning; pulse 120; pupils were very much dilated yesterday evening, and the leeches were repeated in the same number as before; pupils pretty natural this morning. There are no paralytic symptoms except the aphonia; medicine operated ten times yesterday. Applic. lotio frigid. capit.

9th — Had a paroxysm of fever which continued the greater part of the day, feels better this morning; pulse 104; speaks a little better; bowels very open yesterday; pupils natural. Contin. lotio capit.

10th — No fever yesterday. Arm, at the place he was bled, inflamed and painful; a poultice has been applied. Eyes natural this morning; the pupils not being dilated; pulse 90; speaks a little with difficulty. Sumat haust. purgant. ʒiv. Contin. lotio capit. et applic. etiam brachio.

11th — No fever, pupils pretty natural, but they were a good deal dilated yesterday evening; pulse 86; and he speaks much better, medicine operated. Contin. lotio capit. et brachio.

12th — Speaks very distinctly this morning; pulse upwards of 150; pupils natural; appetite good; arm well. Contin. lotio capit.

13th — Improving; pulse 76; pupils rather dilated; bowels open; tongue clean.

14th — Continues better.

15th — Continues quite well.

17th — Discharged.

He had another attack of aphonia on 27th October, which was brought on by exposure to the sun. It was removed by bleeding and purgatives, during the attack his pulse was 108; but there was no heat of skin; next day it fell to 60 and his speech became distinct.

## 4.

*A Notice of the state of health of the Prisoners in the Konkan Subsidiary Jail at Trombay. Communicated in a letter addressed to the Superintending Surgeon.* By J. D. Campbell, Esq.

Presented by the Medical Board, April, 1843.

In reporting on the present state of the Prisoners in the Konkan Subsidiary Jail, I beg leave to premise that no material change has taken place, either in the character or frequency of disease since my last report. I shall therefore take this opportunity of laying before you a statement of a disease which has prevailed and generally proved fatal since January, and to which the mortali-

ty in the Jail may be specially attributed. I cannot enter into a lengthened detail, within the limits of this letter, and, indeed, I have not yet arranged my notes on the subject, which I am daily collecting with the intention of submitting them to the Medical Board on the removal of this camp. The disease to which I allude bears a remarkable resemblance to that described by Doctors Hardy, Prichard, and Bourchier, in the Transactions of the Medical and Physical Society of Bombay; and there is also a case detailed by C. Morehead, Esq, M. D. in his Pathology of the Diseases of Bombay, which appears identical with some of those fatal cases, the diaries of which have been already forwarded. The morbid symptoms are chiefly languor, with œdema of the feet and legs, generally accompained by diarrhœa, dropsy, sometimes extending over the whole body. The face at the same time undergoes a remarkable change, circumscribed pallor overspreads it, the lips become bloodless, and the expression idiotic. Death is generally very sudden. Although the disease is very unmanageable, I have found considerable benefit derived from the following formula with occasional mercurial alteratives:—

℞. Acet. Scillæ ℥i.
Tinct. Digitalis m. xv.
Infus. Rhei. ℥i.
Infus. Gentian Co. ℥ii.
Potass Nitrat. ℈i.
Tinct Cardamom. Co.
Tinct. Columbæ ā ā ℥i.

Repeated three or four times a day.

2nd. The nominal return of sick in hospital is necessarily much increased by the frequency of slight accidents, such as bruises and wounds of the feet and hands, and in connection with this subject I may mention that lacerated wounds of the heel are very common and in many instances are volumtarily incurred by the men in order to avoid their daily tasks, these wounds being attended with little or no pain.

3rd. I find a great tendency to pulmonary disease among the prisoners, — pleurisy and pleuro-pneumonia having several times occurred: but Phthisis is the most common and makes rapid progress. I have found tubercular disease to a greater or less extent in nearly every case in which I have performed a post mortem examination.

4th. In conclusion, I beg to inform you that the water (so often blamed as a cause of disease here) is of very good quality as is evident from the continued good health of the Sepoys, and I can only account for the feeble state of the prisoners when once attacked by disease, by attributing it to the depressing influence of the imprisonment, morally, while their inattention to cleanliness is a most probable physical cause.

Trombay;
21st *March*, 1843.

5.

* *Tabular statement of the total admissions and deaths in the European General Hospital at Bombay, for the five years from July* 1838, *to July* 1843 *with per centage of deaths on admissions, for the same period.* By C. Morehead, M. D.

Presented, December 1843.

| | 1838. | | 1839. | | 1840. | | 1841. | | 1842. | | 1843. | | Total. | | Monthly average. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Admissions. | Deaths. | Admissions. | Deaths. | Admissions. | Deaths. | Admissions. | Deaths. | Admissions. | Deaths. | Admissions. | Deaths. | Admissions. | Deaths. | Per-centage of deaths on admissions. |
| January | " | " | 79 | 8 | 76 | 10 | 128 | 12 | 108 | 2 | 158 | 11 | 549 | 43 | 7.6 |
| February | " | " | 46 | 3 | 69 | 9 | 81 | 8 | 96 | 5 | 119 | 7 | 411 | 32 | 7.7 |
| March | " | " | 56 | 6 | 104 | 9 | 89 | 7 | 118 | 6 | 139 | 5 | 506 | 33 | 6.5 |
| April | " | " | 89 | 7 | 131 | 16 | 89 | 5 | 141 | 8 | 131 | 5 | 581 | 41 | 7. |
| May | " | " | 129 | 17 | 148 | 13 | 129 | 17 | 224 | 21 | 230 | 12 | 860 | 80 | 9.3 |
| June | " | " | 122 | 3 | 154 | 10 | 145 | 7 | 206 | 21 | 154 | 10 | 781 | 51 | 6.6 |
| July | 100 | 5 | 118 | 5 | 143 | 6 | 148 | 12 | 209 | 9 | " | " | 718 | 37 | 5.1 |
| August | 72 | 5 | 137 | 6 | 94 | 4 | 126 | 13 | 178 | 7 | " | " | 607 | 35 | 5.7 |
| September | 66 | 5 | 114 | 9 | 93 | 10 | 108 | 9 | 165 | 19 | " | " | 546 | 52 | 9 5 |
| October | 50 | 5 | 165 | 5 | 101 | 1 | 224 | 8 | 182 | 8 | " | " | 722 | 27 | 3.7 |
| November | 71 | 4 | 191 | 8 | 137 | 10 | 80 | 9 | 206 | 16 | " | " | 685 | 47 | 6.8 |
| December | 68 | 5 | 97 | 15 | 96 | 8 | 124 | 4 | 228 | 34 | " | " | 613 | 66 | 10.7 |
| Total | 427 | 29 | 1343 | 92 | 1346 | 106 | 1471 | 111 | 2061 | 156 | 931 | 50 | 7579 | 544 | 7.1 |
| Deaths per-cent of annual admissions. | 6.7 | | 6.8 | | 7.8 | | 7.5 | | 7.5 | | 5.3 | | | | |

Taking the average of the five years the deaths per cent, of admissions for the half year from December to May inclusive are ..... 6.2

Do. for half year from May to November inclusive ..... 8.1

* The object of this table is to complete the data on which are grounded the calculations given in my remarks on Delirium Tremens, and notes on Remittent and Intermittent Fever.

The inmates of the European General Hospital are supplied from the following classes, the Military details of the Garrison and Naval details of the Dockyard and Steam department; the poor fixed resident European community; seamen from H. M.'s Navy, the Indian Navy and Merchant service. The last class, that of seamen, generally constitutes about two-thirds of the inmates. During the last two years the daily number in hospital has ranged from about 70 to 120; and this is a considerable increase on what used formerly to be the case, consequent on additions made to the Government establishments, and to the increased shipping which resorts to the port.

## 6.

### The late Dr. John Grant Malcolmson, M. D.; F. R. S.; F. G. S.

Though Dr. Malcolmson's connection with this Society took place at a time when he had ceased to be an active member of the Medical Profession, though his name has been already celebrated in association with another Society and the pursuit of other branches of natural science, and though the recollection of his generous character and his social virtues will long endear his memory to the community of this place,—it still devolves on the Medical Society to recollect that but a few years have elapsed, since the career which Dr. Malcolmson had commenced, gave promise, had it been continued, that as a zealous and philosophic cultivator of Medical Science in India, he would soon not have been second to any of his predecessors or contemporaries.

Dr. Malcolmson entered the Madras Medical Service in the year 1823, and for about ten years was actively employed in different parts of that Presidency, and while in medical charge of European and Native troops, had ample opportunity of collecting the numerous facts and acquiring the professional experience which appear in his published writings.

In the year 1833 the Madras Government offered a prize of Rs. 500 for the best dissertation on each of the two following subjects.

1. On the disease called "Beriberi."
2. On Rheumatism and the Neuralgic affection occasionally a sequela of it, which is termed among Natives "Burning of the feet."

Dr. Malcolmson was the successful competitor for both prizes, and his Essays were published by the Madras Government in the year 1835.

The subject of this notice was then appointed Secretary to the Madras Medical Board, and after discharging the duties of that office with much ability for about a year and a half, he returned to England in 1836, on sick certificate.

During his residence in England the following Essays on subjects connected with medicine were published by Dr. Malcolmson :—

1. A letter to the Right Honorable Sir Henry Hardinge, K. C. B., M. P., on the effects of solitary confinement on the health of Soldiers in warm climates.
2. Clinical Remarks on some cases of liver abscess, presenting externally; Edinburgh Medical and Surgical Journal for October 1839.
3. On a peculiar symptom occurring in some cases of enlarged liver; Medico-chirurgical Transactions. Vol, xxi. London 1838.
4. A Review of three works on Bronchocele in the British and Foreign Medical Review for July 1839.

Dr. Malcolmson retired from the Madras Medical Service in the year 1840 and became a partner in the house of Messrs. Forbes & Co., at Bombay. In February 1844 he proceeded on a tour with the view of exploring the Geology of parts of Guzerat and Khandeish, and while thus engaged he was attacked with Hepatitis and died at Dhoolia on the 23rd of March.

The following proceedings of the Bombay Branch of the Royal Asiatic Society, mark the sense entertained by that Society of the high and varied qualities of their late Secretary.

*Bombay Branch of the Royal Asiatic Society.*

At a Monthly Meeting of the Society held in the Library Rooms on Wednesday the 10th April 1844.

The following Resolutions were then proposed to the meeting by the Chairman Dr. James Burnes, K. H. seconded by Dr. Bird, and carried unaniously : —

1. That the Bombay Branch of the Royal Asiatic Society do enter on their records an expression of deep and heartfelt regret for the loss of their Secretary, the late J. G. Malcolmson Esq. M. D.; F. R. S.; F. G. S.; a Gentleman whose high integrity of character, generosity, warmth of heart, and zeal in the promotion of science, and wide and varied acquirements, obtained for him the esteem and respect of all who knew him, and especially of the members of this Society, with whom he was in constant and gratifying intercourse.

2. That, with the view of perpetuating a record of those feelings towards the memory of that eminent individual, the Society do accord, yearly, a gold medal, to be designated "The Malcolmson Medal" to the author of the best paper presented to the Society on the Natural History and Literature of India, points in which the late lamented Secretary evinced the deepest Interest.

3. That a fund be raised for the above purpose by subscription among the members of the Society.

# QUARTERLY PROCEEDINGS

OF THE

# MEDICAL AND PHYSICAL SOCIETY OF BOMBAY.

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*Proceedings from 1st January to 31st March*, 1843.

MEMBERS ELECTED.

*Ordinary.*

D. Grierson, Esq. Bombay Establishment; H. Giraud, Esq. Assistant Surgeon, Bombay Establishment, elected in accordance with regulation No. 7.

*Communications Presented.*

1. Letters from H. S. Fleming, Esq. Madras Establishment; M. T. Kays, Esq. Surgeon; and C. Cramond, Esq. Assistant Surgeon, Bombay Establishment, signifying their wish to withdraw from the Society.
2. A letter from H. Franklin, Esq., Deputy Inspector General of Her Majesty's Hospitals, Bombay, forwarding a series of cases from Staff Surgeon R. H. A. Hunter, late Assistant Surgeon of the 2nd Queens Royal Regiment of Foot.
3. A letter from J. Murray, Esq., Surgeon to the Convalescent Station, Mahabuleshwur Hills, to the address of the Superintending Surgeon, Presidency Division, forwarding remarks on a residence at Panchgunnee during last monsoon, by the Rev. Allen Graves of the American Mahratta Mission at that station; presented by the Medical Board.
4. Observations on the good and bad effects of Calomel in some of the Diseases of India; by J. Murray, Esq. Surgeon.
5. Monthly Register of Sick on board the Honorable Company's armed Steamer Nitocris, for the months of November and December 1842, by G. Q. Lynch, Esq., presented by the Medical Board.

*Proceedings from 1st April to 30th June* 1843.

MEMBERS ELECTED.

*Ordinary.*

S. Osborn, Esq.; J. Turner,; F. Broughton, Esq., and T. B. Johnstone,

Esq. Assistant Surgeons, Bombay Establishment, elected in accordance with Regulation, No. 7.

Dr. McLennan, has been elected President of the Society in succession to Dr. Kennedy.

Dr. Graham and Dr. Brown, have been elected members of the Committee of Management, in succession to Dr. Kennedy and Mr. Glen.

With reference to Regulation No. 10, and Circular dated 23rd January, 1843, the following Gentlemen, whose subscriptions are more than three years in arrears, have ceased to be members of the Society. C. F. Collier, Esq. J. P. Malcolmson, Esq., and J. J. Atkinson, Esq.

*Communications Presented.*

1. A letter from F. S. Cahill, Esq. requesting that his name may be withdrawn from the list of members.

2. Letters from E. Barlow, M. D., of Bath and J. Floyd, Esq. Surgeon late in medical charge of the Hon'ble Company's Flotilla on the rivers of Mesopotamia, acknowledging the receipt of the 4th Number of the Society's Transactions.

3. A letter from J. G. Crosse, Esq. of Norwich, acknowledging the receipt of a copy of the Society's Transactions.

4. Contributions to Vegetable Embryology, from observations on the origin and development of the Embryo, in Tropœolum Majus; by H. Giraud, M. D. Edin. F. B. S. E. Ext. Mem: Med Soc. Edin. &c. &.

5. A report on the present state of the Subsidiary Jail Prisoners, Trombay; by J. D. Campbell, Esq.; presented by the Medical Board.

6. Medical Report on the Kingdom of Shoa; by R. Kirk, Esq ; presented by the Medical Board.

7. Annual Report of the Sick in Hospital of the 16th Regiment, N. I., for 1842; by John Scott, Esq.; presented by the Medical Board.

8. The Annual Hospital Report of the 18th Regiment, N. I., for 1842; by F. S. Arnott, Esq.; presented by the Medical Board.

9. Annual Report of the sick of the 22nd Regiment, N. I., for the year 1842; by A. Arnott, Esq.; presented by the Medical Board.

10 Annual Report of the 1st Troop Horse Artillery for 1842; by R. Baxter, Esq.; presented by the Medical Board.

11. Annual Report of the Native General Hespital for the year 1842; by A. Graham, Esq.; presented by the Medical Board.

12. Remarks on the use of Iodine in solution for the radical cure of Hydrocele; by J. W. Winchester, Esq.

13. Extract of a Report by A. Gibson, Esq. Superintendent of the Government Botanical Garden, on the growth of Senna, Henbane, and other medicinal plants; presented by the Medical Board.

*Proceedings from 1st July to 31st December, 1843.*

MEMBERS ELECTED.

*Ordinary.*

E. W. Stone, Esq. Her Majesty's 14th Light Dragoons.

*Communications Presented.*

1. A letter from the Royal College of Surgeons in London, acknowledging the receipt of 4 Numbers of the Society's Transactions.
2. Remarks on the Treatment of Cholera by J. D. Campbell, Esq.; presented by the Medical Board.
3. Cases illustrative of the Pathology of the diseases of Bombay. Part II; by C. Morehead M. D.
4. Observations on the Case of Gunner J. Garvey taken from the half yearly Reports of 2nd Troop Horse Artillery, dated 1st July 1836 and 1st January 1837; by A. Arnott, Esq. Surgeon.
5. Could the Natives of a temperate climate colonize and increase in a tropical country and vice versa? by Arthur S. Thomson, M. D. Assistant Surgeon 14th Light Dragoons.
6. Remarks on the Treatment and Pathology of Delirium Tremens, as observed in the European General Hospital at Bombay during the five years from July 1838 to July 1843; by C. Morehead, M. D.
7. Example of the beneficial influence of change of climate on the health of Europeans in India, by Arthur S. Thomson, M. D. Assistant Surgeon 14th Light Dragoons.
8. An inquiry into the evidence which is recorded in relation to the influence of the lunar changes upon certain forms of disease; by J. Peet, Esq.
9. Register of the Pluviometer at Bombay for the months of May, June, July, August, September, and October 1843, by G. Noton, Esq.
10. Notes on the Treatment and Pathology of Intermittent and Remittent fever, as observed in the European General Hospital at Bombay during the five years from July 1838 to July 1843; by C. Morehead. M. D.

COMMITTEE OF MANAGEMENT. FOR 1844.

*President.*

J. McLENNAN, ESQ.

*Members.*

J. G. MALCOLMSON, ESQ.
A. GRAHAM, ESQ.
J. BURNES, K. H.
R. BROWN, M. D.

*Secretary.*

C. MOREHEAD, M. D.

# LIST OF DONATIONS FOR THE LIBRARY.

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By the Editor.

2. The India Journal of Medical and Physical Science from January to December 1843.

By the Author.

1. Essays on the Philosophy of Vitality as contradistinguished from Chemical and Mechanical Philosophy, and on the modus operandi of remedial agents; by M. Paine, A. M., M. D., Professor, &c.
2. Memoir of the late James Hope, M. D., Physician to St. George's Hospital, &c. &c. by Mrs. Hope.

By the Asiatic Society of Bombay.

Journal of the Bombay Branch Royal Asiatic Society, No. IV.

By the Medical Board of Bombay.

1. Report on the Medical Topography and Statistics of the Centre Division of the Madras Army, published by the Medical Board of Madras.
2. Report on the Medical Topography and Statistics of the Presidency Division of the Madras Army, including Fort St. George and its dependencies, within the limits of the Supreme Court, published by the Medical Board of Madras.
3. A Practical Memoir on the History and Treatment of the Diseases of the Camel, with instructions for preserving its efficiency as an Animal of transport and a general outline of its Anatomy, also an account of the Medicines used in the cure of its diseases; drawn up by W. Gilchrist, Esq., Assistant Surgeon, public cattle depot, Hoonsoor.

By M. L. Bouton, Esq. Secretary to the Society of Natural History in Mauritius.

A copy of the Annual Report of the Society of Natural History in Mauritius.

# LIST OF MEMBERS

OF THE

# MEDICAL AND PHYSICAL SOCIETY OF BOMBAY.

## ORDINARY MEMBERS BOMBAY PRESIDENCY.

The asterisk ( * ) marks those members who are absent on furlough or sick leave.

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Arnott, F. S., M. D., *Assistant Surgeon.*

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A. Anderson, Esq., *Acting Surgeon to H. B. Majesty's Superintendent in China.*

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